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Fri 23 Feb 2001
Eff. Date 03/30/98

U.S. Army Corps of Engineers
PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0

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TITLE PAGE 1

HANFORD ER PROGRAM
D&D FACILITIES
119-KW Exhaust Air Sampling Bldg
CONTAM BLDG MOD < 1,000 SF
Rev. #0

Designed By:
Estimated By: Bechtel Hanford Incorporated

Prepared By: Bechtel Hanford Incorporated

Preparation Date: 03/30/98
Effective Date of Pricing: 03/30/98

Sales Tax: 8.00%

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Release 5.30C

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PROJECT NOTES

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118-KW-2 Horizontal Control Rod Storage Cave

Notes:

This model was created by copying the Contaminated Building >30,000 SF model and incorporating the appropriate changes peculiar to the Contaminated Building < 1,000 SF model. The Contaminated Building >30,000 SF was the first of the model revisions for the 100 area D&D sites. It is based on the changes made to the 3706 building model done in 1997 with additional changes from the project team in January of 1998.

Currently in this model:

1. Direct Distributable = 18.92%
2. General and Administrative (G&A) = 4.04%
3. The labor database used is located @ E:\readwrit\1999base\99tables\BHF98B. The ERC wages are dated 10/17/97 and the HSSA rates are dated 11/14/97.
4. The equipment database is located @ E:\readwrit\1999base\99tables\NAT97C entitled "Eq Rates EP 1110-1-8, VIII SEP97+B". All equipment rates are from the BHI equipment pool. They are as per IOM dated 10/17/97, CCN#052378.
5. All D&D work is assumed to be ERC. Therefore there are no subcontractor overhead and profit adders.
6. Contingency calculation is available within the model but currently set at 0%. For baseline estimates contingency is calculated outside the model.
7. All HPT (RCT) equipment was removed from the model because it's cost is covered under the direct distributable account.

Special Note:

This model is structured so that it can calculate costs with or without the disposal/transportation costs for contaminated waste transported for disposal at ERDF. For example, FFS estimates require the ERDF disposal/transportaiton costs to be in the estimate. Baseline estimates leave these costs out since the ERDF they are covered\ under another ADS. The WBS elements that are affected by this are 18.03.02, 03, & 04. To include the ERDF transportation/disposal costs in the estimate simply make sure the cost per cubic foot appears in the "other" column for the "LLW Disposal Fee" at the resource level of each of these WBS elements. To exclude these costs simply place this unit cost at \$0. Also be sure to change the note section for each of these elements.

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	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>					
.	HANFORD ER PROGRAM				
<hr/>					
HANFORD ER PROGRAM					
	W A5 0	278.0000 SF		1.0000	278.0000 SF
	PRODUCTIVITY	18.0000 SF /			
	DURATION	15.4444			
A1	0 Concrete <= 2 ft thk				
	Concrete <= 2 ft thk	N		7.0000	BCY
A1	0 Concrete <= 2 ft thk				7.0000 BCY
A2	0 Concrete > 2 ft thk				
	Concrete > 2 ft thk	N		0.0000	BCY
A2	0 Concrete > 2 ft thk				0.0000 BCY
A3	0 Masonry				
	Masonry	N		0.0000	BCF
A3	0 Masonry				0.0000 BCF
A4	0 Building Footprint				
	Building Footprint	N		278.0000	SF
A4	0 Building Footprint				278.0000 SF
A5	0 Building Gross Area				
	Building Gross Area	N		278.0000	SF
A5	0 Building Gross Area				278.0000 SF
A6	0 Exterior Wall Surface Area				
	Exterior Wall Surface Area	N		542.0000	SF
A6	0 Exterior Wall Surface Area				542.0000 SF
A7	0 Interior Partition Surface Area				
	Interior Partition Surface Area	N		0.0000	SF

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	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
. HANFORD ER PROGRAM					
A7 0 Interior Partition Surface Area					0.0000 SF
A8 0 Roof Area					
Roof Area	N	278.0000			SF
A8 0 Roof Area					278.0000 SF
A9 0 Duct Asbestos Quantity					
N	186.0000				SF
A9 0 Duct Asbestos Quantity					186.0000 SF
A91 0 Pipe Asbestos Quantity					
Asb Pipe Qty (Default = GBA*.1) N	28.0000				LF
A91 0 Pipe Asbestos Quantity					28.0000 LF
A92 0 Equipment Density					
Equipment Density	N	1.0000			CF/SF
A92 0 Equipment Density					1.0000 CF/SF
A93 0 % Rad Contaminated (Decimal)					
% Rad Contaminated (Decimal) N	0.1500				
A93 0 % Rad Contaminated (Decimal)					0.1500

ASBDUR0 Asbestos Removal Duration

Asbestos Floor and Ceiling	N (	0.0000	N None	
2 crews @ 80 sf/hr = 160 sf/hr	W FLASBS0 (	556.0000	/ Divide by	SF
10% of Total	N	160.0000	* Multiply by	SF/HR
Asbestos Pipe	N	0.1000)	+ Add to	
2 crews @ 15 sf/hr = 30 lf/hr	W A91 0 (	28.0000	/ Divide by	LF
Duct Asbestos Quantity	N	30.0000)	+ Add to	LF/HR
2 crews @ 50 sf/hr = 100 sf/hr	W A9 0 (186.0000	/ Divide by	SF
	N	100.0000)	N None	SF/HR
	N	0.0000)	U Round Up	
	N	1.0000		

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. HANFORD ER PROGRAM	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
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ASBDUR0 Asbestos Removal Duration 4.0000 HR

ASBNON0 Uncontaminated Asbestos

Total Asbestos Volume	W ASBQTY0 (	90.0000	* Multiply by	LCF
	N (	1.0000	- Subtract Next	
% Rad Contaminated (Decimal)	W A93 0	0.1500)	N None	
	N	0.0000)	R Round	
	N	1.0000		

ASBNON0 Uncontaminated Asbestos 77.0000 LCF

ASBQTY0 Total Asbestos Volume

	N (	0.0000	N None	
	N (	0.0000	N None	
Floor and Ceiling Area	W FLASBS0 (	556.0000	* Multiply by	SF
% Asbestos	N	0.1000	* Multiply by	
Asbestos Thickness	N	0.1250)	+ Add to	FT
Interior Wall Partitions	W A7 0 (	0.0000	* Multiply by	SF
% Asbestos	N	0.2000	* Multiply by	
Astestos Thickness	N	0.1250)	+ Add to	FT
Duct Asbestos Quantity	W A9 0 (	186.0000	* Multiply by	SF
Asbestos Thickness	N	0.1250)	+ Add to	FT
Pipe Asbestos Quantity	W A91 0 (	28.0000	* Multiply by	LF
2" Thick ASB per LF of 10" pipe (See Parameter note)	N	0.5210)	N None	CF/LF
Swell Factor (100%)	N	0.0000)	* Multiply by	
Round Up	N	2.0000)	U Round Up	
	N	1.0000		

ASBQTY0 Total Asbestos Volume 90.0000 LCF

BORROW0 Borrow Quantity

	N (	0.0000	N None	
Borrow to Replace Foundation	W FOUNCY0 (	103.0000	+ Add to	BCY
LLW Soil Quantity	W SOILLO (	11.0000	/ Divide by	LCY
Remove Swell from SOILL	N	1.1500)	N None	
	N	0.0000)	* Multiply by	
Add for Compaction 10%	N	1.1000)	U Round Up	
	N	1.0000		

BORROW0 Borrow Quantity 124.0000 LCY

BSTEEL0 Tons of Building Steel

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	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
Gross Building Area	W A5 0 (278.0000	*	Multiply by	SF
5 LB of Steel per Square Foot	N	5.0000	/	Divide by	LB/SF
Convert to Tons	N	2000.0000)	U	Round Up	LB/TON
	N	1.0000			
BSTEEL0 Tons of Building Steel					1.0000 TON
CHRDUR0 Characterization Report Duration					
Base Characterization Report	N	16.0000	+	Add to	HR
Gross Building Area	W A5 0 (	278.0000	/	Divide by	SF
	N	1000.0000	*	Multiply by	
MH per 1000 sf	N	1.6000)	U	Round Up	
	N	1.0000			
CHRDUR0 Characterization Report Duration					17.0000 HR
CLNPED0 Clean Pipe, Equip, & Duct					
Pipe, Equipment, & Duct Volume	W PEDVOL0	350.0000	*	Multiply by	LCF
	N	1.0000	-	Subtract Next	
% Rad Contaminated (Decimal)	W A93 0	0.1500)			
CLNPED0 Clean Pipe, Equip, & Duct					297.5000 LCF
CONREC0 Recycled Concrete and Masonry					
Total Concrete and Masonry	W CONTOT0 (	12.0000	*	Multiply by	LCY
	N	0.5000)	R	Round	
	N	1.0000			
CONREC0 Recycled Concrete and Masonry					6.0000 LCY
CONTOT0 Total Concrete and Masonry					
Concrete Qty <= 2 ft Thk	N (	0.0000	N	None	
	W A1 0 (	7.0000	+	Add to	BCY
Concrete Qty > 2 ft Thk	W A2 0	0.0000)	*	Multiply by	BCY
Swell 60%	N	1.6000	+	Add to	
Masonry - no swell	W MASQTY0	0.0000)	U	Round Up	BCY
	N	1.0000			
CONTOT0 Total Concrete and Masonry					12.0000 LCY
DCTVOL0 Duct Volume					

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. HANFORD ER PROGRAM	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
Gross Building Area per 100 sq ft	W A5 0 (N	278.0000 100.0000	/ * * Multiply by		SF
Duct Length per 100 sq ft	N	10.0000	* * Multiply by		LF
Average Side Width	N	1.6700	* * Multiply by		LF
Average Side Height	N	1.6700) 1.0000	U Round Up		LF
DCTVOL0 Duct Volume				78.0000	CF
DIS<2 0 Dismantle Concrete <= 2 ft. thk.					
Concrete <= 2 ft thk	W A1 0 (N	0.0000 7.0000	N None / Divide by		BCY
	N	20.0000)	U Round Up		CY\HR
	N	1.0000			
DIS<2 0 Dismantle Concrete <= 2 ft. thk.				1.0000	HR
DIS>2 0 Dismantle Concrete > 2 ft. thick					
Concrete > 2 ft thk	W A2 0 (N	0.0000 0.0000	N None / Divide by		BCY
	N	10.0000)	U Round Up		CY\HR
	N	1.0000			
DIS>2 0 Dismantle Concrete > 2 ft. thick				0.0000	HR
DISBLD0 Building Dismantlement Duration					
Dismantle Concrete <= 2 ft. thk. W DIS<2 0	N 1.0000	0.0000 + Add to			HR
Dismantle Concrete > 2 ft. thick W DIS>2 0	N 0.0000	+ Add to			HR
Dismantle Masonry Walls W DISMSN0	N 0.0000	+ Add to			HR
Dismantle Building Steel W DISSTL0	N 1.0000				HR
DISBLD0 Building Dismantlement Duration				2.0000	HR
DISMSN0 Dismantle Masonry Walls					
Masonry Qty W MASQTY0 (N	0.0000 0.0000	N None * Multiply by			BCY
To make zero logic work N	50.0000)	< Lesser of			FACTOR
Duration to be 24 hours if N	0.0000	N None			HRS
Masonry quantity is not zero. N	24.0000				
DISMSN0 Dismantle Masonry Walls				0.0000	HR

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. HANFORD ER PROGRAM	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>					
DISSTL0 Dismantle Building Steel					
<hr/>					
Tons of Building Steel	N 0.0000	N None			
	W BSTEEL0 (1.0000	/ Divide by			TON
	N 4.0000)	U Round Up			TON/HR
	N 1.0000				
<hr/>					
DISSTL0 Dismantle Building Steel				1.0000	HR
<hr/>					
DURASS0 Assessment Duration					
Pre-Decommissioning Duration	W DURPRE0 (1768.0000	/ Divide by			HR
Convert to Mos. (8 hrs x 21 days	N 168.0000)	* Multiply by			HR/MO
	N 1.0000				
<hr/>					
DURASS0 Assessment Duration				10.5238	MO
<hr/>					
DURDIS0 Dismantling Activities Duration					
Asbestos Removal Duration	N (0.0000	N None			
	W ASBDURO 4.0000	+ Add to			HR
Remove Surface Contamination	W TLAREA0 (1098.0000	* Multiply by			SF
	N 0.0050)	/ Divide by			
2 Crews @ 7.5 sf/hr = 15 sf/hr	N 15.0000	+ Add to			SF/HR
Remove Pipe, Equip, & Duct	W PEDVOL0 (350.0000	/ Divide by			LCF
2 Crews @ 25 cf/hr = 50 cf/hr	N 50.0000)	+ Add to			CF/HR
Dismantling of Building Struct.	W DISBLD0 2.0000	+ Add to			HR
Clean Soil Excavation	W SOILNR0 (58.0000	/ Divide by			LCY
	N 100.0000)	+ Add to			LCY/HR
Contaminated Soil Excavation	W SOILLL0 (11.0000	/ Divide by			LCY
	N 100.0000)	+ Add to			LCY/HR
Site Restoration	W SPRCOM0 (182.0000	/ Divide by			LCY
	N 75.0000)	N None			LCY/HR
	N 0.0000)	U Round Up			
	N 1.0000				
<hr/>					
DURDIS0 Dismantling Activities Duration				17.0000	HR
<hr/>					
DURPRE0 Pre-Decommissioning Duration					
EE/CA	N (1008.0000	+ Add to			HRS
Action Memorandum	N 160.0000	+ Add to			HRS
RDR	N 520.0000	- Subtract Next			HRS
3 Week Adjustment	N 120.0000	+ Add to			HRS
Work Package Development	N 160.0000	- Subtract Next			HRS
2 Week Adjustment	N 80.0000	+ Add to			HR
Readiness Evaluation	N 80.0000	+ Add to			HR
Mobilization	N 40.0000	+ Add to			HR

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.	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
.					
N		0.0000)	U Round Up		
N		1.0000			
DURPRE0	Pre-Decommissioning Duration				1768.0000 HRS
DURPST0	Post-Decommissioning Duration				
N		0.0000	N None		
Demob is concurrent w/D&D report	N	0.0000	N None		
Final D&D Report	N	40.0000			HR
DURPST0	Post-Decommissioning Duration				40.0000 HR
DURREM0	Remediation Duration				
Total Project Duration	W DURTTL0	10.8631	- Subtract Next		MO
Assessment Duration	W DURASS0	10.5238			MO
DURREM0	Remediation Duration				0.3393 MO
DURTTL0	Total Project Duration				
N	(	0.0000	N None		
N	(	0.0000	N None		
Pre-Decommissioning Duration	W DURPRE0	(1768.0000	+ Add to		HR
Dismantling Activities Duration	W DURDIS0	17.0000	+ Add to		HR
Post-Decommissiong Duration	W DURPST0	40.0000)	/ Divide by		HR
Convert crew-hrs to work day	N	8.0000)	/ Divide by		HR/DAY
Convert work days to months	N	21.0000)	N None		DAY/MO
N		1.0000			
DURTTL0	Total Project Duration				10.8631 MO
FLASBS0	Floor and Ceiling Area				
Gross Building Area	W A5	0	278.0000	* Multiply by	SF
Floor and Ceiling Area	N		2.0000		
FLASBS0	Floor and Ceiling Area				556.0000 SF
FOUNCY0	Borrow to Replace Basement				
Footprint	W A4	0 (	278.0000	* Multiply by	SF
Average Depth	N		10.0000	/ Divide by	FT
Convert to Cubic Yards	N		27.0000)	U Round Up	
N			1.0000		

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.	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
FOUNCY0 Borrow to Replace Basement					103.0000 BCY
HAZANL0 Hazardous Waste Anal. Qty					
Asbestos Removal Duration 1 Sample per day (i.e. 8 hrs) Round Up	W ASBDUR0 (N N	4.0000 8.0000) 1.0000	/ Divide by U Round Up		HR
HAZANL0 Hazardous Waste Anal. Qty					1.0000
HAZVOL0 Total Hazardous Waste Volume					
Hazardous Waste Volume % Rad Contaminated (Decimal)	W QTYHAZ0 (W A93 0 N N	4.0000 1.0000 0.1500) 0.0000) 1.0000	* Multiply by - Subtract Next N None R Round		CF
HAZVOL0 Total Hazardous Waste Volume					3.0000 CF
LLWTOT0 Total Low Level Waste Volume					
LLW Soil & Concrete Volume Rad Contam Pipe, Equip, Duct, & Asb	W QTYLLW0 (W QTYRAD0 N N	17.0000 66.0000 27.0000) 1.0000	+ Add to / Divide by R Round		LCY LCF CF/CY
LLWTOT0 Total Low Level Waste Volume					19.0000 LCY
MASQTY0 Masonry Qty					
Masonry Convert to Cubic Yards	W A3 0 (N N	0.0000 27.0000) 1.0000	/ Divide by U Round Up		BCF
MASQTY0 Masonry Qty					0.0000 BCY
MIXVOL0 Total Mixed Waste Volume					
Hazardous Waste Volume % Rad Contaminated (Decimal)	W QTYHAZ0 (W A93 0 N	4.0000 0.1500) 1.0000	* Multiply by R Round		CF
MIXVOL0 Total Mixed Waste Volume					1.0000 CF

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. HANFORD ER PROGRAM	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
PEDNON0 Total Clean Waste Vol (excl asb)					
Pipe, Equipment, & Duct Volume	W PEDVOL0 (	350.0000	*	Multiply by	CF
	N (	1.0000	-	Subtract Next	
% Rad Contaminated (Decimal)	W A93 0	0.1500)	N	None	
	N	0.0000)	R	Round	
	N	1.0000			
PEDNON0 Total Clean Waste Vol (excl asb)				298.0000	CF
PEDRAD0 Contam. Pipe, Equip., & Duct					
Pipe, Equipment, & Duct Volume	W PEDVOL0 (	350.0000	*	Multiply by	LCF
% Rad Contaminated (Decimal)	W A93 0	0.1500)	U	Round Up	
	N	1.0000			
PEDRAD0 Contam. Pipe, Equip., & Duct				53.0000	LCF
PEDVOL0 Pipe, Equipment, & Duct Volume					
Gross Building Area	N (	0.0000	N	None	
	W A5 0 (	278.0000	*	Multiply by	SF
Equipment Density	W A92 0	1.0000)	+	Add to	CF/SF
Duct Volume	W DCTVOL0 (	78.0000	*	Multiply by	CF
Volume Reduction (30%)	N	0.7000)	+	Add to	
Pipe Volume	W PIPVOL0 (	15.0000	*	Multiply by	CF
Volume Gain (10%)	N	1.1000)	N	None	
	N	0.0000)	U	Round Up	
	N	1.0000			
PEDVOL0 Pipe, Equipment, & Duct Volume				350.0000	LCF
PHOTOA0 Rolls of Film - Assessment					
Assessment Duration	W DURASS0 (	10.5238)	U	Round Up	MO
	N	1.0000			
PHOTOA0 Rolls of Film - Assessment				11.0000	ROLLS
PHOTOR0 Rolls of Film (Remediation)					
Dismantling Activities Duration	W DURDIS0 (	17.0000	/	Divide by	HR
	N	168.0000)	U	Round Up	HR/MO
	N	1.0000			
PHOTOR0 Rolls of Film (Remediation)				1.0000	ROLLS

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PIPVOL0 Pipe Volume					
Gross Building Area per 100 sf	N W A5 0 (0.0000 278.0000	N / * * None Divide by	SF	
Pipe Length per 100 sf	N	100.0000	N * * Multiply by		
Pi	N	15.0000)	N * * Multiply by	LF	
Average Assumed Radius- 8 in dia	N (	3.1416 0.3333	N * * Multiply by To Power	FT	
	N	2.0000)	N None		
NOTE: Volume does not include pipe removed with asbestos	N	0.0000)	N Round Up		
	N	1.0000			
PIPVOL0 Pipe Volume				15.0000	CF
<hr/>					
QTYHAZO Hazardous Waste Volume					
Building Gross Area	W A5 0 (	278.0000	* * Multiply by	SF	
5% of GBA has Hazardous Waste	N	0.0500	* * Multiply by		
Haz Waste density	N	0.2500)	N Round Up	CF/SF	
	N	1.0000			
QTYHAZO Hazardous Waste Volume				4.0000	CF
<hr/>					
QTYLLW0 LLW Soil & Concrete Volume					
Total Concrete and Masonry	W CONTOTO (	12.0000	* * Multiply by	LCY	
50% LLW	N	0.5000)	+ Add to		
LLW Soil Quantity	W SOILLL0	11.0000	U Round Up	LCY	
	N	1.0000			
QTYLLW0 LLW Soil & Concrete Volume				17.0000	LCY
<hr/>					
QTYLND0 Clean Landfill Volume (PED,ASB)					
Pipe, Equipment, & Duct Volume	N (	0.0000 350.0000	N None + Add to	CF	
Total Asbestos Volume	W PEDVOL0 (	90.0000)	* * Multiply by	CF	
% Rad Contaminated (Decimal)	N (	1.0000 0.1500)	- Subtract Next N None		
	N	0.0000)	U Round Up		
	N	1.0000			
QTYLND0 Clean Landfill Volume (PED,ASB)				374.0000	CF
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QTYRAD0 Rad Contam Pipe,Equip,Duct,& Asb	N (0.0000	N None		

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Pipe, Equipment, & Duct Volume	W PEDVOL0 (350.0000	+ Add to		LCF
Total Asbestos Volume	W ASBQTY0	90.0000)	* Multiply by		LCF
% Rad Contaminated (Decimal)	W A93 0	0.1500)	U Round Up		
	N	1.0000			
QTYRAD0 Rad Contam Pipe,Equip,Duct,& Asb				66.0000	LCF

SAMHAZ0 Hazardous Waste Samples

N	(	0.0000	N	None	
N	(	0.0000	N	None	
Pipe, Equipment, & Duct Volume	W PEDVOL0 (	350.0000	/ Divide by		LCF
Convert to CY	N	27.0000)	+ Add to		
Total Soil Excavation Quantity	W SOILQY0 (	1601.0000	/ Divide by		BCF
Convert to Bank Cubic Yards	N	27.0000	* Multiply by		
15% Swell	N	1.1500)	+ Add to		
Concrete <= 2 ft thk	W A1 0	7.0000	+ Add to		BCY
Concrete > 2 ft thk	W A2 0	0.0000)	* Multiply by		BCY
5% of total soil, concrete, duct	N	0.0500	/ Divide by		
equipment and piping sampled at	N	5.0000)	U Round Up		
1 sample per 5cy	N	1.0000			
SAMHAZ0 Hazardous Waste Samples				1.0000	EA

SAMPL10 LLW Soil Sample Quantity

LLW Soil Quantity	W SOILLL0 (	11.0000	* Multiply by		LCY
Qty sampled	N	0.1500	/ Divide by		
Sample frequency	N	3.5000)	U Round Up		
	N	1.0000			
SAMPL10 LLW Soil Sample Quantity				1.0000	EA

SAMPL20 Concrete sample quantity

Total Concrete and Masonry	W CONTOT0 (	12.0000	* Multiply by		LCY
50% LLW	N	0.5000	* Multiply by		
Qty Sampled	N	0.0500	/ Divide by		
sample frequency	N	16.0000)	U Round Up		
	N	1.0000			
SAMPL20 Concrete sample quantity				1.0000	EA

SAMPML0 LLW/Haz Samples - Mobile Lab

N	(0.0000	N	None	
LLW Soil Sample Quantity	W SAMPL10 (1.0000	* Multiply by		EA

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Concrete sample quantity	N W SAMPL20	0.9000) 1.0000	+ Add to + Add to		EA EA
Rad Equip Mobile Lab Analyses	W SMEQML0	1.0000	+ Add to		EA
Haz Analysis - Mobile Lab	W SMHZML0	1.0000)	U Round Up		EA
	N	1.0000			
SAMPML0 LLW/Haz Samples - Mobile Lab				4.0000	EA
SAMPOS0 LLW/Haz Samples - Off-site					
Haz Analysis - Off-Site	W SMHZOS0 (	1.0000	+ Add to		EA
Rad Equip Off-Site Analyses	W SMEQOS0	1.0000	+ Add to		EA
LLW Soil Sample Quantity	W SAMPL10 (	1.0000	* Multiply by		EA
	N	0.1000)	N None		
	N	0.0000)	U Round Up		
	N	1.0000			
SAMPOS0 LLW/Haz Samples - Off-site				3.0000	EA
SAMPQC0 Quality Control Samples					
Rad Equip Off-Site QC Analyses	W SMEQQC0 (	1.0000	+ Add to		EA
Haz Analysis Off-Site for QC	W SMHZQC0	1.0000	+ Add to		EA
LLW Sample Quantity	W SAMPL10 (	1.0000	+ Add to		EA
Concrete sample quantity	W SAMPL20	1.0000)	* Multiply by		EA
	N	0.0500)	U Round Up		
	N	1.0000			
SAMPQC0 Quality Control Samples				3.0000	EA
SITEPRO Site Perimeter (Fence Length)					
Site Area	W SITESF0 (	16047.0000	P To Power		SF
	N	0.5000	* Multiply by		
	N	4.0000)	U Round Up		
	N	1.0000			
SITEPRO Site Perimeter (Fence Length)				507.0000	LF
SITESF0 Site Area (Inside Fence Area)					
Building Footprint	N (	0.0000	N None		
	N (	0.0000	N None		
	W A4 0 (278.0000)	P To Power		SF
	N	0.5000	+ Add to		
	N	110.0000)	* Multiply by		
	N (0.0000	N None		

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. HANFORD ER PROGRAM	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
Building Footprint	W A4 0 (	278.0000)	P To Power		SF
	N	0.5000	+ Add to		
	N	110.0000)	N None		
	N	0.0000)	U Round Up		
	N	1.0000			
SITESF0 Site Area (Inside Fence Area)				16047.0000	SF
SMEQML0 Rad Equip Mobile Lab Analyses					
Rad Samples - Pipe,Equ,Duct,Asb	W SMLLEQ0 (	1.0000	* Multiply by		EA
90% analyzed by mobile lab	N	0.9000)	U Round Up		
	N	1.0000			
SMEQML0 Rad Equip Mobile Lab Analyses				1.0000	EA
SMEQOS0 Rad Equip Off-Site Analyses					
Rad Samples - Pipe,Equ,Duct,Asb	W SMLLEQ0 (	1.0000	* Multiply by		EA
10% Samples analyzed off-site	N	0.1000)	U Round Up		
	N	1.0000			
SMEQOS0 Rad Equip Off-Site Analyses				1.0000	EA
SMEQQC0 Rad Equip Off-Site QC Analyses					
Rad Samples - Pipe,Equ,Duct,Asb	W SMLLEQ0 (	1.0000	* Multiply by		EA
Extra 5% (i.e 1 per 20 samples)	N	0.0500)	U Round Up		
	N	1.0000			
SMEQQC0 Rad Equip Off-Site QC Analyses				1.0000	EA
SMHZML0 Haz Analysis - Mobile Lab					
Hazardous Waste Samples	W SAMHAZ0 (	1.0000	* Multiply by		EA
90% analyzed by mobile lab	N	0.9000)	U Round Up		
	N	1.0000			
SMHZML0 Haz Analysis - Mobile Lab				1.0000	EA
SMHZOS0 Haz Analysis - Off-Site					
Hazardous Waste Samples	W SAMHAZ0 (1.0000	* Multiply by		EA
10% analyzed off-site	N	0.1000)	U Round Up		
	N	1.0000			

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. HANFORD ER PROGRAM	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>					
SMHZOS0 Haz Analysis - Off-Site				1.0000	EA
<hr/>					
SMHZQC0 Haz Analysis Off-Site for QC				1.0000	EA
Hazardous Waste Samples	W SAMHAZ0 (	1.0000	* Multiply by		
5% Analyzed Off-site for QC	N	0.0500)	U Round Up		
	N	1.0000			
<hr/>					
SMHZQC0 Haz Analysis Off-Site for QC				1.0000	EA
<hr/>					
SMLLEQ0 Rad Samples - Pipe,Equ,Duct,Asb				1.0000	EA
Pipe, Equip, Duct & Asb Volume	N (	0.0000	N None		
	W QTYRAD0 (	66.0000	/ Divide by		
	N	27.0000)	* Multiply by		CF
15% Sampled	N	0.1500	/ Divide by		CF/CY
	N	7.0000)	U Round Up		
	N	1.0000			
<hr/>					
SMLLEQ0 Rad Samples - Pipe,Equ,Duct,Asb				1.0000	EA
<hr/>					
SMSWML0 LLW/Soil/Sludge - Mobile Lab					
LLW Soil Sample Quantity	N (	0.0000	N None		
	W SAMPL10 (	1.0000	* Multiply by		EA
	N	0.9000)	+ Add to		
Concrete sample quantity	W SAMPL20	1.0000)	U Round Up		EA
	N	1.0000			
<hr/>					
SMSWML0 LLW/Soil/Sludge - Mobile Lab				2.0000	EA
<hr/>					
SMSWOS0 LLW/Sludge/Soil - Off-site					
LLW Soil Sample Quantity	W SAMPL10 (	1.0000	* Multiply by		
	N	0.1000)	U Round Up		
	N	1.0000			
<hr/>					
SMSWOS0 LLW/Sludge/Soil - Off-site				1.0000	EA
<hr/>					
SMSWQC0 LLW/Sludge/Soil - QC					
LLW/Soil/Sludge - Mobile Lab	N (	0.0000	N None		
	W SMSWML0 (	2.0000	+ Add to		
LLW/Sludge/Soil - Off-site	W SMSWOS0	1.0000)	* Multiply by		EA
Analyze 1 per 20 samples	N	0.0500)	U Round Up		

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. HANFORD ER PROGRAM	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
	N	1.0000			
SMSWQC0 LLW/Sludge/Soil - QC					1.0000 EA
SOILLL0 LLW Soil Quantity					
Total Soil Quantity	N (	0.0000	N None		
	W SOILQY0 (	1601.0000	* Multiply by	BCF	
15% Swell	N	1.1500	* Multiply by		
Percent Rad contaminated	N	0.1500)	/ Divide by		
	N	27.0000)	U Round Up		
N	1.0000				
SOILLL0 LLW Soil Quantity					11.0000 LCY
SOILNR0 Non-Rad Soil Quantity					
Total Soil Quantity	N (	0.0000	N None		
	W SOILQY0 (	1601.0000	* Multiply by	BCF	
15% Swell	N	1.1500	* Multiply by		
Percent Non-Rad Soil (85%)	N	0.8500)	/ Divide by		
	N	27.0000)	U Round Up		
N	1.0000				
SOILNR0 Non-Rad Soil Quantity					58.0000 LCY
SOILQY0 Total Soil Excavation Quantity					
Building Footprint	N (	0.0000	N None		
	W A4 0 (	278.0000	P To Power	SF	
	N	0.5000	+ Add to		
Excavate 5' out from Bldg.	N	10.0000)	* Multiply by	LF	
4 sides	N (	4.0000)	* Multiply by		
Excavate 5' out from Bldg.	N (	5.0000	* Multiply by	LF	
Excavation Depth	N	3.0000)	N None	LF	
	N	0.0000)	U Round Up		
N	1.0000				
SOILQY0 Total Soil Excavation Quantity					1601.0000 BCF
SPRCOM0 Spread and Compact					
Non-Rad Soil Quantity	W SOILNR0 (	58.0000	+ Add to	LCY	
Borrow Quantity	W BORROW0	124.0000)	U Round Up	LCY	
N	1.0000				
SPRCOM0 Spread and Compact					182.0000 LCY

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. HANFORD ER PROGRAM		REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>						
TLAREA0	Total Surface Area					
Gross Building Area	N	(	0.0000	N	None	
	W A5	0	(	278.0000	*	Multiply by
Ceiling Area	N		2.0000)		+	Add to
Exterior Wall Surface Area	W A6	0	542.0000		+	Add to
Interior Partition Surface Area	W A7	0	0.0000)	U	Round Up	SF
	N		1.0000			SF
TLAREA0	Total Surface Area				1098.0000	SF
VOLSTL0	Building Steel Volume					
Tons of Building Steel	W BSTEEL0	(	1.0000	/	Divide by	
ton per cu ft	N		0.2450	*	Multiply by	TON
Swell (300%)	N		3.0000	/	Divide by	
Convert to cu yd	N		27.0000)	U	Round Up	
	N		1.0000			
VOLSTL0	Building Steel Volume				1.0000	CY
01	Mobilization & Preparatory Work				1.0000	LS
01.02	Mobilize Personnel and Equipment				1.0000	LS
01.02.01	Mob Asbestos Air Monitoring Crew				8.0000	HR
PRODUCTIVITY			1.0000 HR /HR			
DURATION			8.0000 HR			
1	INSTRUMENT TECHNICIAN - 1 ea	D	8.0000 HR	*	Multiply by	1.0000
2	Level B/Level C Consumables	D	8.0000 HR	*	Multiply by	1.0000
3	Air Monitor - 2 ea	D	8.0000 HR	*	Multiply by	2.0000
01.02.02	Mobilize Demolition Prep Crew				24.0000	HR
PRODUCTIVITY			1.0000 HR /HR			
DURATION			24.0000 HR			
1	RAD CONTROL TECHNICIANS - 1 ea	D	24.0000 HR	*	Multiply by	1.0000
3	D & D WORKER - 3 ea	D	24.0000 HR	*	Multiply by	3.0000
4	HP SUPERVISOR - .25 ea	D	24.0000 HR	*	Multiply by	0.2500
5	D & D SUPERVISOR - 1 ea	D	24.0000 HR	*	Multiply by	1.0000
6	FORKLIFT, RIDING, 12,000 LB	D	24.0000 HR	*	Multiply by	1.0000

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01.02.05. Mobilize Site Work Equipment
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01.02.05. Mobilize Site Work Equipment		REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>						
01.02.05 Mobilize Site Work Equipment						16.0000 HRS
2 MECHANIC (4 ea) (for LB 318)	P	16.0000 HRS	*	Multiply by	4.0000	64.0000 HR
2 RIGGER (2 ea) (for LB 318)	P	16.0000 HRS	*	Multiply by	2.0000	32.0000 HR
3 HEAVY EQUIP OPER (1 ea)(F. LB318 P	P	16.0000 HRS	*	Multiply by	1.0000	16.0000 HR
01.04.01 Establish Facilities						1.0000 EA
01.04.01.01 Install Temporary Const Barrier						
W SITEPRO		507.0000 LF			1.0000	507.0000 LF
PRODUCTIVITY		200.0000 LF /HR				
DURATION		2.5350 HR				
1 D & D WORKER - 3 ea	D	2.5350 HR	*	Multiply by	3.0000	7.6050 HR
3 Small Tools - 3 ea	D	2.5350 HR	*	Multiply by	3.0000	7.6050 HR
4 Material/Supply Allowance	P	507.0000 LF	*	Multiply by	1.0000	507.0000 LF
01.04.01.03 Facility Rental						1.0000 LS
Asbestos Decon Trailer	W ASBDURO	4.0000 HR	/	Divide by	168.0000	0.0238 MO
Restroom Facility	W DURDIS0	17.0000 HR	B	(R) Divide by	168.0000	0.0000 MO
02 Monitoring, Sampling & Analysis						1.0000 LS
02.03.03 Asbestos Air Monitoring						
W ASBDURO		4.0000 HR			1.0000	4.0000 HR
PRODUCTIVITY		1.0000 HR /HR				
DURATION		4.0000 HR				
1 INSTRUMENT TECHNICIAN - 0.15 ea	D	4.0000 HR	*	Multiply by	0.1500	0.6000 HR
2 Level B/Level C Consumables	D	4.0000 HR	*	Multiply by	0.1500	0.6000 HR
3 Air Monitor - 1 ea	D	4.0000 HR	*	Multiply by	1.0000	4.0000 HR
4 Sample Analysis	W HAZANL0	1.0000	*	Multiply by	1.0000	1.0000 EA
02.07 Obtain Hazardous & Rad Samples						
W A5 0		278.0000 SF			1.0000	278.0000 SF
PRODUCTIVITY		369.0000 SF /HR				
DURATION		0.7534 HR				
1 RAD CON TECHNICIANS (2 ea)	D	0.7534 HR	*	Multiply by	2.0000	1.5068 HR
2 LABORER (2 EA)	D	0.7534 HR	*	Multiply by	2.0000	1.5068 HR
3 SKILLED CRAFT SUPERVISOR - .5 ea	D	0.7534 HR	*	Multiply by	0.5000	0.3767 HR
4 HP SUPERVISOR - .375 ea	D	0.7534 HR	*	Multiply by	0.3750	0.2825 HR

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02.07. Obtain Hazardous & Rad Samples
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02.07. Obtain Hazardous & Rad Samples		REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
5	SMALL TOOLS - 2 ea	D	0.7534 HR	* Multiply by	2.0000	1.5068 HR
6	Level B/Level C Consumables- 4ea	D	0.7534 HR	* Multiply by	4.0000	3.0136 HR
02.	Analyze LLW Sample (Mobile Lab)	W SMSWML0	2.0000 EA	* Multiply by	1.0000	2.0000 EA
02.	Analyze LLW Sample - Off-site	W SMSWOS0	1.0000 EA	* Multiply by	1.0000	1.0000 EA
02.	Analyze Quality Control Samples	W SMSWQC0	1.0000 EA	* Multiply by	1.0000	1.0000 EA
02.	Analyze LLW Sample (Mobile Lab)	W SMEQML0	1.0000 EA	* Multiply by	1.0000	1.0000 EA
02.	Analyze LLW Sample (Off-site)	W SMEQOS0	1.0000 EA	* Multiply by	1.0000	1.0000 EA
02.	Analyze Quality Control Samples	W SMEQQC0	1.0000 EA	* Multiply by	1.0000	1.0000 EA
02.09	Analysis of Haz Contamination					1.0000 LS
	Analyze Haz Sample - Mobile Lab	W SMHZML0	1.0000 EA	* Multiply by	1.0000	1.0000 EA
	Analyze Haz Sample (Off-site)	W SMHZOS0	1.0000 EA	* Multiply by	1.0000	1.0000 EA
	Analyze Quality Control Samples	W SMHZQC0	1.0000 EA	* Multiply by	1.0000	1.0000 EA
08	Solids Collection & Containment					1.0000 LS
08.01.01.01	Excavate and Stockpile					
	W SOILNR0		58.0000 LCY		1.0000	58.0000 LCY
	PRODUCTIVITY		100.0000 LCY/HR			
	DURATION		0.5800 HR			
1	HEAVY EQUIPMENT OPERATOR - 1 ea	D	0.5800 HR	* Multiply by	1.0000	0.5800 HR
2	SUPERVISOR - 1 ea	D	0.5800 HR	* Multiply by	1.0000	0.5800 HR
3	RAD CONTROL TECHNICIAN - 1 ea	D	0.5800 HR	* Multiply by	1.0000	0.5800 HR
4	TRAC HOE, CAT 245/375 (1 EA)	D	0.5800 HR	* Multiply by	1.0000	0.5800 HR
7	Level D Consumables (2 EA)	D	0.5800 HR	* Multiply by	2.0000	1.1600 HR
08.01.01.02	Provide Dust Suppression					
	W SOILNR0		58.0000 LCY		1.0000	58.0000 LCY
	PRODUCTIVITY		100.0000 LCY/HR			
	DURATION		0.5800 HR			
1	HEAVY DRIVER - 1 ea	D	0.5800 HR	* Multiply by	1.0000	0.5800 HR
2	WATER TRUCK, 4000 GAL W/CANNON	D	0.5800 HR	* Multiply by	1.0000	0.5800 HR
3	Level D Consumables	D	0.5800 HR	* Multiply by	1.0000	0.5800 HR
08.01.02	Contaminated Soil					1.0000 LS
08.01.02.01	Excavate and Stockpile					
	W SOILLL0		11.0000 LCY		1.0000	11.0000 LCY
	PRODUCTIVITY		100.0000 LCY/HR			
	DURATION		0.1100 HR			
1	HEAVY EQUIPMENT OPERATOR - 1 ea	D	0.1100 HR	* Multiply by	1.0000	0.1100 HR

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08.01.02.01. Excavate and Stockpile
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08.01.02.01. Excavate and Stockpile		REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
2	SUPERVISOR - 1 ea	D	0.1100 HR	* Multiply by	1.0000	0.1100 HR
3	RAD CONTROL TECHNICIAN - 1 ea	D	0.1100 HR	* Multiply by	1.0000	0.1100 HR
4	HP SUPERVISOR - 0.25 ea	D	0.1100 HR	* Multiply by	0.2500	0.0275 HR
5	TRAC HOE, CAT 245/375 (1 ea)	D	0.1100 HR	* Multiply by	1.0000	0.1100 HR
7	Level D Consumables (2 ea)	D	0.1100 HR	* Multiply by	2.0000	0.2200 HR
08.01.02.02 Provide Dust Suppression		W SOILLL0	11.0000 LCY		1.0000	11.0000 LCY
	PRODUCTIVITY		200.0000 LCY/HR			
	DURATION		0.0550 HR			
1	HEAVY DRIVER - 1 ea	D	0.0550 HR	* Multiply by	1.0000	0.0550 HR
2	WATER TRUCK, 4000 GAL W/CANNON	D	0.0550 HR	* Multiply by	1.0000	0.0550 HR
3	Level D Consumables (1 ea)	D	0.0550 HR	* Multiply by	1.0000	0.0550 HR
17 Decon and Decommissioning (D&D)					1.0000	LS
17.01 Pre-Decommissioning Operations					1.0000	LS
17.01.03 Haz Mat'l & Radioactivity Survey					1.0000	LS
17.01.03.01 Sampling & Analysis Plan		PRODUCTIVITY	1.0000 HR /HR		360.0000	HR
	DURATION		360.0000 HR			
1	ERC HP & CHARACTERIZATION ENGR	D	360.0000 HR	* Multiply by	0.1700	61.2000 HR
2	ERC PROJECT MANAGEMENT - 0.05 ea	D	360.0000 HR	* Multiply by	0.0500	18.0000 HR
3	ERC ADMIN. SERVICES .05 ea	D	360.0000 HR	* Multiply by	0.0500	18.0000 HR
17.01.03.03 Characterization Report		W CHRDUR0	17.0000 HR		1.0000	17.0000 HR
	PRODUCTIVITY		1.0000 HR /HR			
	DURATION		17.0000 HR			
1	ERC HP & CHARACTERIZATION ENGR	D	17.0000 HR	* Multiply by	1.0000	17.0000 HR
2	ERC PROJECT MANAGEMENT - 0.25 ea	D	17.0000 HR	* Multiply by	0.2500	4.2500 HR
3	ERC ADMIN SERVICES (.25 ea)	D	17.0000 HR	* Multiply by	0.2500	4.2500 HR
17.04.13.01 Remove Material & Equipment		W PEDVOL0	350.0000 LCF		1.0000	350.0000 LCF
	PRODUCTIVITY		25.0000 LCF/HR			
	DURATION		14.0000 HR			

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17.04.13.01. Remove Material & Equipment
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17.04.13.01. Remove Material & Equipment		REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
1	RAD CONTROL TECHNICIANS - 1 ea	D	14.0000 HR	* Multiply by	1.0000	14.0000 HR
2	D & D WORKER - 3 ea	D	14.0000 HR	* Multiply by	3.0000	42.0000 HR
4	D & D SUPERVISOR - 1 ea	D	14.0000 HR	* Multiply by	1.0000	14.0000 HR
5	INDUSTRIAL HYGIENE TECH - .25 ea	D	14.0000 HR	* Multiply by	0.2500	3.5000 HR
6	Small Tools - 3 ea	D	14.0000 HR	* Multiply by	3.0000	42.0000 HR
7	MANLIFT-SCISSOR, 36' (1 EA)	D	14.0000 HR	* Multiply by	1.0000	14.0000 HR
8	Level D Consumables, (4 ea)	D	14.0000 HR	* Multiply by	4.0000	56.0000 HR
17.04.13.02 Package/Transfer Rad Contam Eqmt						
	W PEDRAD0		53.0000 LCF		1.0000	53.0000 LCF
	PRODUCTIVITY		60.0000 LCF/HR			
	DURATION		0.8833 HR			
1	RAD CONTROL TECHNICIANS - 1 ea	D	0.8833 HR	* Multiply by	1.0000	0.8833 HR
2	D & D WORKER - 3 ea	D	0.8833 HR	* Multiply by	3.0000	2.6500 HR
3	HP SUPERVISOR (.25 EA)	D	0.8833 HR	* Multiply by	0.2500	0.2208 HR
4	D & D SUPERVISOR - 1 ea	D	0.8833 HR	* Multiply by	1.0000	0.8833 HR
5	FORKLIFT, RIDING, 12,000 LB	D	0.8833 HR	* Multiply by	1.0000	0.8833 HR
6	Small Tools - 3 ea	D	0.8833 HR	* Multiply by	3.0000	2.6500 HR
7	Level B/Level C Consumables	D	0.8833 HR	* Multiply by	4.0000	3.5333 HR
17.04.14 Remove and Package Asbestos						1.0000 LS
17.04.14.01 Floor & Ceiling Asbestos Removal						
	W FLASBS0		556.0000 SF		0.1000	55.6000 SF
	PRODUCTIVITY		80.0000 SF /HR			
	DURATION		0.6950 HR			
1	RAD CONTROL TECHNICIAN - 1 ea	D	0.6950 HR	* Multiply by	1.0000	0.6950 HR
2	HP SUPERVISOR - 0.25 ea	D	0.6950 HR	* Multiply by	0.2500	0.1738 HR
3	D & D WORKER - 3 ea	D	0.6950 HR	* Multiply by	3.0000	2.0850 HR
4	D & D SUPERVISOR - 1 ea	D	0.6950 HR	* Multiply by	1.0000	0.6950 HR
5	Small Tools - 3 ea	D	0.6950 HR	* Multiply by	3.0000	2.0850 HR
6	MANLIFT-SCISSOR, 36' (1 EA)	D	0.6950 HR	* Multiply by	1.0000	0.6950 HR
7	Level B/Level C Consumables	D	0.6950 HR	* Multiply by	4.0000	2.7800 HR
8	Allowance for Packaging	D	0.6950 HR	* Multiply by	1.0000	0.6950 HR
17.04.14.02 Pipe Asbestos Removal						
	W A91 0		28.0000 LF		1.0000	28.0000 LF
	PRODUCTIVITY		15.0000 LF /HR			
	DURATION		1.8667 HR			
1	RAD CONTROL TECHNICIAN - 1 ea	D	1.8667 HR	* Multiply by	1.0000	1.8667 HR
2	Allowance for Packaging	D	1.8667 HR	* Multiply by	1.0000	1.8667 HR
3	HP SUPERVISOR - 0.25 ea	D	1.8667 HR	* Multiply by	0.2500	0.4667 HR
4	D & D WORKER - 3 ea	D	1.8667 HR	* Multiply by	3.0000	5.6000 HR
5	D & D SUPERVISOR - 1 ea	D	1.8667 HR	* Multiply by	1.0000	1.8667 HR

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17.04.14.02. Pipe Asbestos Removal
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17.04.14.02. Pipe Asbestos Removal		REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
6	Small Tools - 3 ea	D	1.8667 HR	* Multiply by	3.0000	5.6000 HR
7	MANLIFT-SCISSOR, 36' (1 EA)	D	1.8667 HR	* Multiply by	1.0000	1.8667 HR
8	Level B/Level C Consumables	D	1.8667 HR	* Multiply by	4.0000	7.4667 HR
17.04.14.03 Duct Asbestos Removal		W A9 0	186.0000 SF		1.0000	186.0000 SF
	PRODUCTIVITY		50.0000 SF /HR			
	DURATION		3.7200 HR			
1	RAD CONTROL TECHNICIAN (1 ea)	D	3.7200 HR	* Multiply by	1.0000	3.7200 HR
2	HP SUPERVISOR - 0.25 ea	D	3.7200 HR	* Multiply by	0.2500	0.9300 HR
3	D & D WORKER - 3 ea	D	3.7200 HR	* Multiply by	3.0000	11.1600 HR
4	D & D SUPERVISOR - 1 ea	D	3.7200 HR	* Multiply by	1.0000	3.7200 HR
5	Small Tools - 3 ea	D	3.7200 HR	* Multiply by	3.0000	11.1600 HR
6	MANLIFT-SCISSOR, 36' (1 EA)	D	3.7200 HR	* Multiply by	1.0000	3.7200 HR
7	Level B/Level C Consumables	D	3.7200 HR	* Multiply by	4.0000	14.8800 HR
8	Allowance for Packaging	D	3.7200 HR	* Multiply by	1.0000	3.7200 HR
17.04.16.01 Surface Decontamination		W TLAREA0	1098.0000 SF		0.0050	5.4900 SF
	PRODUCTIVITY		7.5000 SF /HR			
	DURATION		0.7320 HR			
1	RAD CON TECHNICIAN - 1 ea	D	0.7320 HR	* Multiply by	1.0000	0.7320 HR
2	D & D WORKER - 3 ea	D	0.7320 HR	* Multiply by	3.0000	2.1960 HR
3	HP SUPERVISOR - 0.25 ea	D	0.7320 HR	* Multiply by	0.2500	0.1830 HR
4	INDUSTRIAL HYGIENE TECH - .25 ea	D	0.7320 HR	* Multiply by	0.2500	0.1830 HR
5	D & D SUPERVISOR - 1 ea	D	0.7320 HR	* Multiply by	1.0000	0.7320 HR
6	Level B/Level C Consumables	D	0.7320 HR	* Multiply by	4.0000	2.9280 HR
7	Decontamination Equipment	D	0.7320 HR	* Multiply by	1.0000	0.7320 HR
8	Small Tools - 3 ea	D	0.7320 HR	* Multiply by	3.0000	2.1960 HR
9	Allowance for Packaging	D	0.7320 HR	* Multiply by	1.0000	0.7320 HR
17.04.16.03 Perform Final Radiation Survey					8.0000 HR	
	PRODUCTIVITY		1.0000 HR /HR			
	DURATION		8.0000 HR			
1	HEALTH PHYSICS TECHNICIAN - 2 ea	D	8.0000 HR	* Multiply by	2.0000	16.0000 HR
2	HP SUPERVISOR - 0.25 ea	D	8.0000 HR	* Multiply by	0.2500	2.0000 HR
3	Level D Consumables (2 ea)	D	8.0000 HR	* Multiply by	2.0000	16.0000 HR
17.04.24 Remove Hazardous Materials					1.0000 LS	
	PRODUCTIVITY		120.0000 LS /HR			
	DURATION		0.0083 HR			

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17.04.24.01. Remove Hazardous Materials
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17.04.24.01. Remove Hazardous Materials REFERENCE		REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>					
17.04.24.01 Remove Hazardous Materials					
	W QTYHAZO	4.0000 CF		1.0000	4.0000 CF
	PRODUCTIVITY	7.5000 CF /HR			
	DURATION	0.5333 HR			
1 RAD CONTROL TECHNICIAN - 1 ea	D	0.5333 HR	* Multiply by	1.0000	0.5333 HR
2 D & D WORKER - 3 ea	D	0.5333 HR	* Multiply by	3.0000	1.6000 HR
3 HP SUPERVISOR - 0.25 ea	D	0.5333 HR	* Multiply by	0.2500	0.1333 HR
4 INDUSTRIAL HYGIENE TECH - 1 ea	D	0.5333 HR	* Multiply by	1.0000	0.5333 HR
5 D & D SUPERVISOR - 1 ea	D	0.5333 HR	* Multiply by	1.0000	0.5333 HR
6 Level B/Level C Consumables	D	0.5333 HR	* Multiply by	4.0000	2.1333 HR
7 Decontamination Equipment	D	0.5333 HR	* Multiply by	1.0000	0.5333 HR
8 Small Tools - 3 ea	D	0.5333 HR	* Multiply by	3.0000	1.6000 HR
9 Allowance for Packaging	D	0.5333 HR	* Multiply by	1.0000	0.5333 HR
17.04.24.02 Transport/Dispose of Haz Waste					
	W QTYHAZO	4.0000 CF		1.0000	4.0000 CF
	PRODUCTIVITY	60.0000 CF /HR			
	DURATION	0.0667 HR			
1 HEAVY DRIVER - 1 ea	D	0.0667 HR	* Multiply by	1.0000	0.0667 HR
2 TRUCK/TRACTOR (1 EA)	D	0.0667 HR	* Multiply by	1.0000	0.0667 HR
3 TRAILER, FLATBED (1 EA)	D	0.0667 HR	* Multiply by	1.0000	0.0667 HR
4 Hazardous Waste Disposal Fee	P	4.0000 CF	M (R) Multiply by	0.8500	3.0000 CF
5 Mixed Waste Disposal Fee	P	4.0000 CF	M (R) Multiply by	0.1500	1.0000 CF
17.04.25 Dismantle Building Structure				1.0000 LS	
17.04.25.01 Dismantle Masonry Walls					
	W MASQTY0	0.0000 BCY		1.0000	0.0000 BCY
	PRODUCTIVITY	0.1670 BCY/HR			
	DURATION	0.0000 HR			
2 D & D WORKER - 1 ea	D	0.0000 HR	* Multiply by	1.0000	0.0000 HR
3 HEAVY DRIVER - 1 ea	D	0.0000 HR	* Multiply by	1.0000	0.0000 HR
4 HEAVY EQUIPMENT OPERATOR - 2 ea	D	0.0000 HR	* Multiply by	2.0000	0.0000 HR
5 RAD CON TECHNICIAN (1 ea)	D	0.0000 HR	* Multiply by	1.0000	0.0000 HR
6 D & D SUPERVISOR - 1 ea	D	0.0000 HR	* Multiply by	1.0000	0.0000 HR
7 HP SUPERVISOR - 0.25 EA	D	0.0000 HR	* Multiply by	0.2500	0.0000 HR
8 WATER TRUCK, 4000 GAL W/CANNON	D	0.0000 HR	* Multiply by	1.0000	0.0000 HR
9 TRAC HOE, CAT 245/375 (1 ea)	D	0.0000 HR	* Multiply by	1.0000	0.0000 HR
11 UP-70 ATTACHMENT, FOR CAT 245	D	0.0000 HR	* Multiply by	1.0000	0.0000 HR
13 FE LOADER, CAT 980-G, 7 CY - 1EA	D	0.0000 HR	* Multiply by	1.0000	0.0000 HR
14 TRUCK/TRACTOR (1 EA)	D	0.0000 HR	* Multiply by	1.0000	0.0000 HR
15 TRAILER, FLATBED (1 EA)	D	0.0000 HR	* Multiply by	1.0000	0.0000 HR
17 Small Tools - 1 ea	D	0.0000 HR	* Multiply by	1.0000	0.0000 HR
19 Level D Consumables (4 ea)	D	0.0000 HR	* Multiply by	4.0000	0.0000 HR

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CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
17.90.01.01. Load/Haul Concrete & Masonary
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17.90.01.01. Load/Haul Concrete & Masonary		REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>						
17.90.01.01.01. Load/Haul Concrete & Masonary						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
2	D & D WORKER (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
3	HEAVY DRIVER (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
4	FE LOADER, CAT 980-G, 7 CY 1 ea	D	0.1500	* Multiply by	1.0000	0.1500 HR
5	TRUCK-DUMP, 15 CY (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
6	SMALL TOOLS (1 EA)	D	0.1500	* Multiply by	1.0000	0.1500 HR
17.90.02.01. Load/Haul Steel to Recycle Plant						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.0667	* Multiply by	1.0000	0.0667 HR
2	TRAC HOE, CAT 245/375 (1 ea)	D	0.0667	* Multiply by	1.0000	0.0667 HR
3	UP-70 ATTACHMENT, FOR CAT 245	D	0.0667	* Multiply by	1.0000	0.0667 HR
18 Disposal						1.0000 LS
18.03 Transport to Storage/Disposal						1.0000 LS
18.03.01 Trans/Disp. Pipe, Equip, & Duct						
2	D & D WORKER - 1 ea	D	1.4691 HR	* Multiply by	1.0000	1.4691 HR
3	CRANE OPERATOR - 1 ea	D	1.4691 HR	* Multiply by	1.0000	1.4691 HR
4	HEAVY EQUIPMENT OPERATOR - 1 ea	D	1.4691 HR	* Multiply by	1.0000	1.4691 HR
6	D & D SUPERVISOR - (.25 ea)	D	1.4691 HR	* Multiply by	0.2500	0.3673 HR
8	RIGGER - 2 ea	D	1.4691 HR	* Multiply by	2.0000	2.9383 HR
9	Clean Landfill Disposal Fee	W CLNPED0	297.5000 LCF	B (R) Divide by	27.0000	11.0000 CY
11	CRAWLER CRANE LB 318 (1 ea)	D	1.4691 HR	* Multiply by	1.0000	1.4691 HR
12	TRAC HOE, CAT 245/375 (1 ea)	D	1.4691 HR	* Multiply by	1.0000	1.4691 HR
13	UP-70 ATTACHMENT, FOR CAT 245	D	1.4691 HR	* Multiply by	1.0000	1.4691 HR
15	Small Tools - 1 ea	D	1.4691 HR	* Multiply by	1.0000	1.4691 HR
17	Level D Consumables (5 ea)	D	1.4691 HR	* Multiply by	5.0000	7.3457 HR
18.03.02 Load/Haul Contaminated Concrete						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
2	D & D WORKER (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
3	HEAVY DRIVER (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
4	FE LOADER, CAT 980-G, 7 CY 1 ea	D	0.1500	* Multiply by	1.0000	0.1500 HR
5	TRUCK-DUMP, 15 CY (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
6	SMALL TOOLS (1 EA)	D	0.1500	* Multiply by	1.0000	0.1500 HR
17.90.01.01.02. Load/Haul Masonry						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
2	D & D WORKER (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
3	HEAVY DRIVER (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
4	FE LOADER, CAT 980-G, 7 CY 1 ea	D	0.1500	* Multiply by	1.0000	0.1500 HR
5	TRUCK-DUMP, 15 CY (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
6	SMALL TOOLS (1 EA)	D	0.1500	* Multiply by	1.0000	0.1500 HR
17.90.01.01.03. Load/Haul Aggregate						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
2	D & D WORKER (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
3	HEAVY DRIVER (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
4	FE LOADER, CAT 980-G, 7 CY 1 ea	D	0.1500	* Multiply by	1.0000	0.1500 HR
5	TRUCK-DUMP, 15 CY (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
6	SMALL TOOLS (1 EA)	D	0.1500	* Multiply by	1.0000	0.1500 HR
17.90.01.01.04. Load/Haul Debris						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
2	D & D WORKER (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
3	HEAVY DRIVER (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
4	FE LOADER, CAT 980-G, 7 CY 1 ea	D	0.1500	* Multiply by	1.0000	0.1500 HR
5	TRUCK-DUMP, 15 CY (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
6	SMALL TOOLS (1 EA)	D	0.1500	* Multiply by	1.0000	0.1500 HR
17.90.01.01.05. Load/Haul Other						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
2	D & D WORKER (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
3	HEAVY DRIVER (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
4	FE LOADER, CAT 980-G, 7 CY 1 ea	D	0.1500	* Multiply by	1.0000	0.1500 HR
5	TRUCK-DUMP, 15 CY (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
6	SMALL TOOLS (1 EA)	D	0.1500	* Multiply by	1.0000	0.1500 HR
17.90.01.01.06. Load/Haul Other						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
2	D & D WORKER (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
3	HEAVY DRIVER (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
4	FE LOADER, CAT 980-G, 7 CY 1 ea	D	0.1500	* Multiply by	1.0000	0.1500 HR
5	TRUCK-DUMP, 15 CY (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
6	SMALL TOOLS (1 EA)	D	0.1500	* Multiply by	1.0000	0.1500 HR
17.90.01.01.07. Load/Haul Other						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
2	D & D WORKER (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
3	HEAVY DRIVER (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
4	FE LOADER, CAT 980-G, 7 CY 1 ea	D	0.1500	* Multiply by	1.0000	0.1500 HR
5	TRUCK-DUMP, 15 CY (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
6	SMALL TOOLS (1 EA)	D	0.1500	* Multiply by	1.0000	0.1500 HR
17.90.01.01.08. Load/Haul Other						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
2	D & D WORKER (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
3	HEAVY DRIVER (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
4	FE LOADER, CAT 980-G, 7 CY 1 ea	D	0.1500	* Multiply by	1.0000	0.1500 HR
5	TRUCK-DUMP, 15 CY (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
6	SMALL TOOLS (1 EA)	D	0.1500	* Multiply by	1.0000	0.1500 HR
17.90.01.01.09. Load/Haul Other						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
2	D & D WORKER (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
3	HEAVY DRIVER (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
4	FE LOADER, CAT 980-G, 7 CY 1 ea	D	0.1500	* Multiply by	1.0000	0.1500 HR
5	TRUCK-DUMP, 15 CY (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
6	SMALL TOOLS (1 EA)	D	0.1500	* Multiply by	1.0000	0.1500 HR
17.90.01.01.10. Load/Haul Other						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
2	D & D WORKER (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
3	HEAVY DRIVER (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
4	FE LOADER, CAT 980-G, 7 CY 1 ea	D	0.1500	* Multiply by	1.0000	0.1500 HR
5	TRUCK-DUMP, 15 CY (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
6	SMALL TOOLS (1 EA)	D	0.1500	* Multiply by	1.0000	0.1500 HR
17.90.01.01.11. Load/Haul Other						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
2	D & D WORKER (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR
3	HEAVY DRIVER (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
4	FE LOADER, CAT 980-G, 7 CY 1 ea	D	0.1500	* Multiply by	1.0000	0.1500 HR
5	TRUCK-DUMP, 15 CY (3 ea)	D	0.1500	* Multiply by	3.0000	0.4500 HR
6	SMALL TOOLS (1 EA)	D	0.1500	* Multiply by	1.0000	0.1500 HR
17.90.01.01.12. Load/Haul Other						
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.1500	* Multiply by	1.0000	0.1500 HR</td

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18.03.02. Load/Haul Contaminated Concrete
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18.03.02. Load/Haul Contaminated Concrete		REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
1	HEAVY EQUIPMENT OPERATOR - 1 ea	D	0.3000 HR	* Multiply by	1.0000	0.3000 HR
2	HEAVY DRIVER - 2 ea	D	0.3000 HR	* Multiply by	2.0000	0.6000 HR
3	RAD CONTROL TECHNICIAN (1 EA)	D	0.3000 HR	* Multiply by	1.0000	0.3000 HR
4	TRK,HWY, 46,000 GVW, 6X4, 3 AXLE	D	0.3000 HR	* Multiply by	2.0000	0.6000 HR
5	20 Ton Tilt Trailer	D	0.3000 HR	* Multiply by	2.0000	0.6000 HR
6	TRAC HOE, CAT 245/375 (1 ea)	D	0.3000 HR	* Multiply by	1.0000	0.3000 HR
7	Supplies/Materials	P	6.0000 LCY	* Multiply by	1.0000	6.0000 CY
18.03.03 Load/Haul Contaminated Soil						
	W SOILLL0		11.0000 LCY		1.0000	11.0000 CY
	PRODUCTIVITY		20.0000 CY /HR			
	DURATION		0.5500 HR			
1	HEAVY EQUIPMENT OPERATOR (1 EA)	D	0.5500 HR	* Multiply by	1.0000	0.5500 HR
2	HEAVY DRIVER (2 ea)	D	0.5500 HR	* Multiply by	2.0000	1.1000 HR
3	RADIATION CONTROL TECH. (1 ea)	D	0.5500 HR	* Multiply by	1.0000	0.5500 HR
4	TRK,HWY, 46,000 GVW, 6X4, 3 AXLE	D	0.5500 HR	* Multiply by	2.0000	1.1000 HR
5	20 Ton Tilt Trailer	D	0.5500 HR	* Multiply by	2.0000	1.1000 HR
6	TRAC HOE, CAT 245/375 (1 ea)	D	0.5500 HR	* Multiply by	1.0000	0.5500 HR
7	Supplies/Materials Allowance	W SOILLL0	11.0000 LCY	* Multiply by	1.0000	11.0000 LCY
18.03.04 Transport/Dispose of Rad Waste						
	W QTYRAD0		66.0000 LCF		1.0000	66.0000 LCF
	PRODUCTIVITY		120.0000 LCF/HR			
	DURATION		0.5500 HR			
	TRK,HWY, 46,000 GVW, 6X4, 3 AXLE	D	0.5500 HR	* Multiply by	1.0000	0.5500 HR
	20 Ton Tilt Trailer	D	0.5500 HR	* Multiply by	1.0000	0.5500 HR
	HEAVY DRIVER (1 EA)	D	0.5500 HR	* Multiply by	1.0000	0.5500 HR
	SUPPLIES & MAT'L ALLOWANCE	W QTYRAD0	66.0000 LCF	* Multiply by	1.0000	66.0000 LCF
18.03.05 Transport Clean Asb. to Lndfill						
	W ASBNON0		77.0000 LCF		27.0000	2.8519 CY
	PRODUCTIVITY		7.5000 CY /HR			
	DURATION		0.3803 HR			
1	D & D WORKER (1 ea)	D	0.3803 HR	* Multiply by	1.0000	0.3802 HR
2	CRANE OPERATOR (1 ea)	D	0.3803 HR	* Multiply by	1.0000	0.3802 HR
3	HEAVY EQUIPMENT OPERATOR (1 ea)	D	0.3803 HR	* Multiply by	1.0000	0.3802 HR
4	D & D SUPERVISOR (.25 EA)	D	0.3803 HR	* Multiply by	0.2500	0.0951 HR
5	RIGGER (2 ea)	D	0.3803 HR	* Multiply by	2.0000	0.7605 HR
6	LANDFILL DISPOSAL FEE	P	2.8519 CY	* Multiply by	1.0000	2.8519 CY
7	CRAWLER CRANE LB 318 (1 ea)	D	0.3803 HR	* Multiply by	1.0000	0.3802 HR
8	TRAC HOE, CAT 245/375 (1 ea)	D	0.3803 HR	* Multiply by	1.0000	0.3802 HR
9	UP-70 ATTACHMENT, FOR CAT 245	D	0.3803 HR	* Multiply by	1.0000	0.3802 HR
10	SMALL TOOLS (1 EA)	D	0.3803 HR	* Multiply by	1.0000	0.3802 HR
11	LEVEL D CONSUMABLES (5 EA)	D	0.3803 HR	* Multiply by	5.0000	1.9012 HR

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CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
20.04.01. Load/Haul Borrow
** LINK LISTING **

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20.04.01. Load/Haul Borrow		REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
<hr/>						
20.04.01 Load/Haul Borrow						
	W BORROW0	124.0000 LCY			1.0000	124.0000 LCY
	PRODUCTIVITY	75.0000 LCY/HR				
	DURATION	1.6533 HR				
1	HEAVY EQUIPMENT OPERATOR (1 ea)	D	1.6533 HR * Multiply by		1.0000	1.6533 HR
2	HEAVY DRIVER (6 ea)	D	1.6533 HR * Multiply by		6.0000	9.9200 HR
3	FE LOADER, CAT 980-G, 7 CY 1 ea	D	1.6533 HR * Multiply by		1.0000	1.6533 HR
4	TRUCK-DUMP, 15 CY, (5 ea)	D	1.6533 HR * Multiply by		5.0000	8.2667 HR
5	WATER TRUCK, 4000 GAL W/CANNON	D	1.6533 HR * Multiply by		1.0000	1.6533 HR
20.04.02 Spread/Compact Borrow and						
	W SPRCOM0	182.0000 LCY			1.0000	182.0000 LCY
	PRODUCTIVITY	120.0000 LCY/HR				
	DURATION	1.5167 HR				
1	HEAVY DRIVER (1 ea)	D	1.5167 HR * Multiply by		1.0000	1.5167 HR
2	HEAVY EQUIPMENT OPERATOR (2 ea)	D	1.5167 HR * Multiply by		2.0000	3.0333 HR
3	SUPERVISOR (1 EA)	D	1.5167 HR * Multiply by		1.0000	1.5167 HR
5	CRAWLER TRACTOR, D8-L (1 ea)	D	1.5167 HR * Multiply by		1.0000	1.5167 HR
7	MOTOR GRADER, JOHN DEERE (1 ea)	D	1.5167 HR * Multiply by		1.0000	1.5167 HR
9	WATER TRUCK, 4000 GAL W/CANNON	D	1.5167 HR * Multiply by		1.0000	1.5167 HR
21 Demobilization					1.0000	LS
21.04.01 Demobilize Facilities					1.0000	EA
21.04.01.01 Remove Temporary Constr Barrier						
	W SITEPRO0	507.0000 LF			1.0000	507.0000 LF
	PRODUCTIVITY	250.0000 LF /HR				
	DURATION	2.0280 HR				
1	D & D WORKER - 3 ea	D	2.0280 HR * Multiply by		3.0000	6.0840 HR
3	Small Tools - 3 ea	D	2.0280 HR * Multiply by		3.0000	6.0840 HR
21.91.01.01 Analysis and Preparation					40.0000	HR
	PRODUCTIVITY	1.0000 HR /HR				
	DURATION	40.0000 HR				
1	ERC ENVIRONMENTAL ENGR - 1 ea	D	40.0000 HR * Multiply by		1.0000	40.0000 HR
2	ERC ADMINISTRATIVE SERVICES .5ea	D	40.0000 HR * Multiply by		0.5000	20.0000 HR
21.91.01.02 Final Analysis Review and					24.0000	HR

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CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
21.91.01.02. Final Analysis Review and
** LINK LISTING **

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21.91.01.02. Final Analysis Review and REFERENCE		REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
		PRODUCTIVITY DURATION	1.0000 HR /HR 24.0000 HR		
1	ERC ENVIRONMENTAL ENGR - 2 ea	D	24.0000 HR * Multiply by	2.0000	48.0000 HR
2	ERC PROJECT MANAGEMENT - 0.25 ea	D	24.0000 HR * Multiply by	0.2500	6.0000 HR
3	ERC SAFETY AND HEALTH/QA - 1 ea	D	24.0000 HR * Multiply by	1.0000	24.0000 HR
4	ERC ADMINISTRATIVE SERVICES -1ea	D	24.0000 HR * Multiply by	1.0000	24.0000 HR
21.91.02.01 Prepare Release Report		W A5 0	278.0000 SF 250.0000 SF /HR 1.1120 HR	1.0000	278.0000 SF
	ERC HP ENGR - 1 ea	D	1.1120 HR * Multiply by	1.0000	1.1120 HR
21.91.02.02 Review and Revise Release Report		PRODUCTIVITY DURATION	1.0000 HR /HR 8.0000 HR		8.0000 HR
1	ERC ENVIRONMENTAL ENGR - (2 ea)	D	8.0000 HR * Multiply by	2.0000	16.0000 HR
2	ERC PROJECT MANAGEMENT - (1 ea)	D	8.0000 HR * Multiply by	1.0000	8.0000 HR
91.20 Remediation				1.0000 LS	
91.20.01 Project Management Support		W DURREMO	0.3393 MO	21.0000	7.1253 DAY
1	ERC PROJECT MANAGEMENT	P	7.1253 DAY * Multiply by	0.4000	2.8501 HRS
2	ERC PROJECT ENGINEER	P	7.1253 DAY * Multiply by	0.8000	5.7002 HRS
3	ERC TASK LEAD	P	7.1253 DAY * Multiply by	0.8000	5.7002 HRS
4	ERC LEAD ENGINEER	P	7.1253 DAY * Multiply by	6.4000	45.6019 HRS
5	ERC RAD CONTROL ENGINEER	P	7.1253 DAY * Multiply by	1.6000	11.4005 HRS
6	ERC FIELD SUPPORT	P	7.1253 DAY * Multiply by	8.0000	57.0024 HRS
7	ERC AREA SUPERINTENDENT	P	7.1253 DAY * Multiply by	0.8000	5.7002 HRS
8	ERC SITE SUPERINTENDENT	P	7.1253 DAY * Multiply by	4.0000	28.5012 HRS
9	ERC ESTIMATOR	P	7.1253 DAY * Multiply by	0.4000	2.8501 HR
10	ERC PLANNER	P	7.1253 DAY * Multiply by	1.2000	8.5504 HRS
11	ERC COST/SCHEDULE ENGINEER	P	7.1253 DAY * Multiply by	2.4000	17.1007 HRS
12	ERC SAFTY AND HEALTH	P	7.1253 DAY * Multiply by	2.0000	14.2506 HRS
13	ERC ADMINISTRATIVE SERVICES	P	7.1253 DAY * Multiply by	1.2000	8.5504 HRS
14	ERC PROCUREMENT	P	7.1253 DAY * Multiply by	0.8000	5.7002 HRS
15	ERC QUALITY ASSURANCE	P	7.1253 DAY * Multiply by	0.4000	2.8501 HRS
16	ERC REGULATORY SUPPORT	P	7.1253 DAY * Multiply by	0.4000	2.8501 HRS
91.	Rolls of Film	W PHOTOR0	1.0000 ROL * Multiply by	1.0000	1.0000 ROL

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PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
XXX.XX. Input Quantities
** LINK LISTING **

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XXX.XX. Input Quantities	REFERENCE	REF VALUE	OPERATOR	LOCAL INPUT	QUANTITY UOM
XXX. Concrete <= 2 ft Thk	W A1	0	7.0000 BCY *	Multiply by	1.0000 7.0000 BCY
XXX. Concrete > 2 ft Thk	W A2	0	0.0000 BCY *	Multiply by	1.0000 0.0000 BCY
XXX. Masonry Quantity	W A3	0	0.0000 BCF *	Multiply by	1.0000 0.0000 BCF
XXX. Footprint	W A4	0	278.0000 SF *	Multiply by	1.0000 278.0000 SF
XXX. Gross Building Area	W A5	0	278.0000 SF *	Multiply by	1.0000 278.0000 SF
XXX. Exterior Wall Surface Area	W A6	0	542.0000 SF *	Multiply by	1.0000 542.0000 SF
XXX. Interior Partition Surface Area	W A7	0	0.0000 SF *	Multiply by	1.0000 0.0000 SF
XXX. Roof Area	W A8	0	278.0000 SF *	Multiply by	1.0000 278.0000 SF
XXX. Duct Asbestos Quantity	W A9	0	186.0000 SF *	Multiply by	1.0000 186.0000 SF
XXX. Pipe Asbestos Quantity	W A91	0	28.0000 LF *	Multiply by	1.0000 28.0000 SF
XXX. Equipment Density	W A92	0	1.0000 CF /	Multiply by	1.0000 1.0000 C/S
XXX. % Rad Contaminated (Decimal)	W A93	0	0.1500 *	Multiply by	1.0000 0.1500
XXX. Total Project Duration	W DURTTL0	10.8631 MO	*	Multiply by	1.0000 10.8631 MO
XXX. LLW Soil and Concrete	W QTYLLW0	17.0000 LCY	*	Multiply by	1.0000 17.0000 LCY
XXX. Borrow Volume	W BORROW0	124.0000 LCY	*	Multiply by	1.0000 124.0000 LCY
XXX. Total Asbestos Volume	W ASBQTY0	90.0000 LCF	*	Multiply by	1.0000 90.0000 CF
XXX. Total Pipe, Equip, & Duct Vol	W PEDVOL0	350.0000 LCF	*	Multiply by	1.0000 350.0000 CF
XXX. Mobile Lab Samples	W SAMPML0	4.0000 EA	*	Multiply by	1.0000 4.0000 EA
XXX. Off-Site Samples	W SAMPOS0	3.0000 EA	*	Multiply by	1.0000 3.0000 EA
XXX. Quality Control Samples	W SAMPQC0	3.0000 EA	*	Multiply by	1.0000 3.0000 EA
XXX. Dismantling Activities Duration	W DURDIS0	17.0000 HR	B (R) Divide by	168.0000	0.0000 MO
XXX. Total Soil Excavation	W SOILQY0	1601.0000 BCF	B (R) Divide by	27.0000	59.0000 BCY
XXX. RAD pipe, equip, duct & asbestos	W QTYRAD0	66.0000 LCF	*	Multiply by	1.0000 66.0000 CF
XXX. Total Clean Waste- excl asbestos	W PEDNON0	298.0000 CF	*	Multiply by	1.0000 298.0000 CF
XXX. Total Uncontaminated Asbestos	W ASBNON0	77.0000 LCF	*	Multiply by	1.0000 77.0000 CF
XXX. Total Low Level Waste Volume	W LLWTOT0	19.0000 LCY	*	Multiply by	1.0000 19.0000 LCY
XXX. Total Hazardous Waste Volume	W HAZVOL0	3.0000 CF	*	Multiply by	1.0000 3.0000 CF
XXX. Total Mixed Waste Volume	W MIXVOL0	1.0000 CF	*	Multiply by	1.0000 1.0000 CF
XXX. Recycled Concrete Volume	W CONREC0	6.0000 LCY	*	Multiply by	1.0000 6.0000 LCY
XXX. Recycled Steel Volume	W VOLSTL0	1.0000 CY	*	Multiply by	1.0000 1.0000 CY
XXX. Assessment Duration	W DURASS0	10.5238 MO	*	Multiply by	1.0000 10.5238 MO
XXX. Remediation Duration	W DURREMO	0.3393 MO	*	Multiply by	1.0000 0.3393 MO

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PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
01. Mobilization & Preparatory Work

TIME 12:57:01
DETAIL PAGE 1

01.02. Mobilize Personnel and Equipment			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
01. Mobilization & Preparatory Work											
01.02. Mobilize Personnel and Equipment											
01.02.01. Mob Asbestos Air Monitoring Crew											
Notes:											
The duration for this activity is assumed to be 8 hours.											
HAM	INSTRUMENT TECHNICIAN - 1 ea		8.00	HR	10T20	56.87	0.00	0.00	0.00	56.87	
						455	0	0	0	455	56.87
L BHI	Level B/Level C Consumables - 1 ea		8.00	HR	Z5	0.00	15.00	0.00	0.00	15.00	
						0	120	0	0	120	15.00
BHI	Air Monitor - 2 ea		16.00	HR	Y1	0.00	10.00	0.00	0.00	10.00	
						0	160	0	0	160	10.00
TOTAL Mob Asbestos Air Monitoring Crew			8.00	HR		455	280	0	0	735	91.87

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CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
01. Mobilization & Preparatory Work

TIME 12:57:01
DETAIL PAGE 2

01.02. Mobilize Personnel and Equipment			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
01.02.02. Mobilize Demolition Prep Crew											
Notes: This crew will also perform asbestos removal, equipment removal, surface decon, and waste packaging and transfer. The duration for this activity is assumed to be 24 hours.											
HAM	RAD CONTROL TECHNICIANS - 1 ea		24.00	HR	10T17	51.61 1,239	0.00 0	0.00 0	0.00 0	51.61 1,239	51.61
HAM	D & D WORKER - 3 ea		72.00	HR	10715	31.18 2,245	0.00 0	0.00 0	0.00 0	31.18 2,245	31.18
HAM	HP SUPERVISOR - .25 ea		6.00	HR	10T17	51.61 310	0.00 0	0.00 0	0.00 0	51.61 310	51.61
HAM	D & D SUPERVISOR - 1 ea		24.00	HR	10715	31.18 748	0.00 0	0.00 0	0.00 0	31.18 748	31.18
USR	FORKLIFT, RIDING, 12,000 LB (1 EA)		24.00	HR	A092	0.00 0	5.76 138	0.00 0	0.00 0	5.76 138	5.76
TOTAL Mobilize Demolition Prep Crew			24.00	HR		4,542	138	0	0	4,680	194.99

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CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
01. Mobilization & Preparatory Work

TIME 12:57:01
DETAIL PAGE 3

01.02. Mobilize Personnel and Equipment				QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>												
01.02.05. Mobilize Site Work Equipment												
Notes:												
The assumption is for 3 hours delivery time for each major piece of equipment. No assembly time is required except for the LB 318 Crane which requires 112 manhours to assemble.												
No demobilization costs are considered since the assumption is that the nexts project assumes the cost of delivery to the following work area.												
USR	CRAWLER CRANE, Link Belt 318 75 Ton Crane with approx. 110' boom.	3.00	HR	A01	0.00	88.13	0.00	0.00	0.00	88.13	264	88.13
HAM	MECHANIC (4 ea) (for LB 318)	64.00	HR	10717	42.04 2,691	0.00 0	0.00 0	0.00 0	0.00 0	42.04 2,691	42.04	42.04
HAM	RIGGER (2 ea) (for LB 318)	32.00	HR	10734	43.58 1,395	0.00 0	0.00 0	0.00 0	0.00 0	43.58 1,395	43.58	43.58
HAM	HEAVY EQUIP OPER (1 ea)(F. LB318	16.00	HR	10719	39.10 626	0.00 0	0.00 0	0.00 0	0.00 0	39.10 626	39.10	39.10
USR	MOTOR GRADER, JOHN DEERE	3.00	HR	A02	0.00 0	19.40 58	0.00 0	0.00 0	0.00 0	19.40 58	19.40	19.40
USR	UP-70 ATTACHMENT, FOR CAT 245 (2 EA)	6.00	HR	A04	0.00 0	71.88 431	0.00 0	0.00 0	0.00 0	71.88 431	71.88	71.88
USR	TRAC HOE, CAT 245/375 (1 ea)	3.00	HR	A03	0.00 0	88.13 264	0.00 0	0.00 0	0.00 0	88.13 264	88.13	88.13
USR	FE LOADER, CAT 980-G, 7 CY	3.00	HR	A05	0.00 0	25.00 75	0.00 0	0.00 0	0.00 0	25.00 75	25.00	25.00
USR	CRAWLER TRACTOR, D8-L	3.00	HR	A06	0.00 0	44.64 134	0.00 0	0.00 0	0.00 0	44.64 134	44.64	44.64
USR	TRAILER, FLATBED	3.00	HR	A07	0.00 0	1.25 4	0.00 0	0.00 0	0.00 0	1.25 4	1.25	1.25
USR	TRUCK/TRACTOR	3.00	HR	A08	0.00 0	30.31 91	0.00 0	0.00 0	0.00 0	30.31 91	30.31	30.31
USR	TRUCK-DUMP, 15 CY (8 ea)	24.00	HR	A09	0.00 0	23.75 570	0.00 0	0.00 0	0.00 0	23.75 570	23.75	23.75
USR	WATER TRUCK, 4000 GAL W/CANNON	3.00	HR	A091	0.00 0	15.63 47	0.00 0	0.00 0	0.00 0	15.63 47	15.63	15.63
USR	FORKLIFT, RIDING, 12,000 LB	3.00	HR	A092	0.00 0	5.76 17	0.00 0	0.00 0	0.00 0	5.76 17	5.76	5.76

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CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
01. Mobilization & Preparatory Work

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DETAIL PAGE 4

01.02. Mobilize Personnel and Equipment			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
USR	MANLIFT-SCISSOR, 36'		3.00	HR	A093	0.00 0	14.05 42	0.00 0	0.00 0	14.05 42	14.05
USR	MANLIFT, MOBILE AERIAL, 110'		3.00	HR	A094	0.00 0	14.05 42	0.00 0	0.00 0	14.05 42	14.05
USR	DEMOLITION BALL, 5 TON		3.00	HR	A095	0.00 0	4.36 13	0.00 0	0.00 0	4.36 13	4.36
USR	TRK, HWY, 46,000 GVW, 6X4, 3 AXL (2 EA) - These are the trucks for hauling the ERDF containers from the excavation to the Que area.		6.00	HR	A08	0.00 0	30.31 182	0.00 0	0.00 0	30.31 182	30.31
TOTAL Mobilize Site Work Equipment			16.00	HRS		4,711	2,235	0	0	6,946	434.12
TOTAL Mobilize Personnel and Equipment						9,707	2,654	0	0	12,361	

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CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
01. Mobilization & Preparatory Work

TIME 12:57:01
DETAIL PAGE 5

01.04. Setup/Construct Temp Facilities		QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>										
01.04. Setup/Construct Temp Facilities										
01.04.01. Establish Facilities										
01.04.01.01. Install Temporary Const Barrier										
Work to be Performed:										
Install chain barrier around site perimeter at a distance of 55' away from building footprint.										
Output:										
Assumed productivity for this activity is 200 lf per crew hour										
HAM	D & D WORKER - 3 ea				31.18 237	0.00 0	0.00 0	0.00 0	31.18 237	31.18
BHI	Small Tools - 3 ea				0.00 0	1.57 12	0.00 0	0.00 0	1.57 12	1.57
M BHI	Material/Supply Allowance				0.00 0	0.00 0	1.35 684	0.00 0	1.35 684	1.35
TOTAL Install Temporary Const Barrier		507.00	LF		----- 237	----- 12	----- 684	----- 0	----- 934	----- 1.84

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CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
01. Mobilization & Preparatory Work

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01.04. Setup/Construct Temp Facilities		QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>										
01.04.01.02. Mobilize/Setup Temp Trailers Mobilization of trailers includes the cost to demobilize from the previous site.										
BHI	Asbestos Decon Facility	1.00	EA		0.00 0	0.00 0	0.00 0	15000.00 15,000	15000.00 15,000	15000.00 15,000
BHI	Restroom Facility	1.00	EA		0.00 0	0.00 0	0.00 0	15000.00 15,000	15000.00 15,000	15000.00 15,000
TOTAL Mobilize/Setup Temp Trailers		4.00	EA		----- 0	----- 0	----- 0	----- 30,000	----- 30,000	7500.00

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CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
01. Mobilization & Preparatory Work

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01.04. Setup/Construct Temp Facilities		QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>								
01.04.01.03. Facility Rental								
Notes:								
Rental duration is linked to duration of dismantling activities for the restroom facility. The Asbestos Decon trailer duration is linked to the asbestos removal activities duration.								
Rates:	Asbestos Decon Trailer = \$150/month Restroom Facility = \$100/month	BHI Asbestos Decon Trailer Duration is linked to asbestos removal duration.	0.02 MO	0.00 0	0.00 0	0.00 0	150.00 4	150.00 4
TOTAL Facility Rental			MO	----- 0	----- 0	----- 0	----- 4	----- 4
TOTAL Establish Facilities			1.00 EA	237	12	684	30,004	30,937
TOTAL Setup/Construct Temp Facilities				237	12	684	30,004	30,937
TOTAL Mobilization & Preparatory Work				9,944	2,665	684	30,004	43,298

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PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
02. Monitoring, Sampling & Analysis

TIME 12:57:01
DETAIL PAGE 8

02.03. Air Monitoring and Sampling			QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
02. Monitoring, Sampling & Analysis											
02.03. Air Monitoring and Sampling											
02.03.03. Asbestos Air Monitoring											
Work to be Performed:											
Provide air monitoring services for asbestos removal operations.											
Output:											
Activity duration is equal to the total duration of asbestos removal operations.											
Sample Analysis:											
1 per day at \$145/Sample											
HAM	INSTRUMENT TECHNICIAN - 0.15 ea		0.60	HR	10T20	56.87 34	0.00 0	0.00 0	0.00 0	56.87 34	56.87
L BHI	Level B/Level C Consumables - 0.15 ea		0.60	HR	Z5	0.00 0	15.00 9	0.00 0	0.00 0	15.00 9	15.00
BHI	Air Monitor - 1 ea		4.00	HR	Y1	0.00 0	10.00 40	0.00 0	0.00 0	10.00 40	10.00
BHI	Sample Analysis 1 ea per day		1.00	EA		0.00 0	0.00 0	0.00 0	145.00 145	145.00 145	145.00
TOTAL Asbestos Air Monitoring			4.00	HR		34	49	0	145	228	57.03
TOTAL Air Monitoring and Sampling						34	49	0	145	228	

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CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
02. Monitoring, Sampling & Analysis

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02.07. Obtain Hazardous & Rad Samples			QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
02.07. Obtain Hazardous & Rad Samples											
Notes:											
Obtain all Haz/Rad samples from site and Mob/Setup of mobile lab.											
Output:											
369 sf of gross building area per crew hour											
HAM	RAD CON TECHNICIANS (2 ea)		1.51	HR	10T17	51.61 78	0.00 0	0.00 0	0.00 0	51.61 78	51.61
HAM	LABORER (2 EA)		1.51	HR	10715	31.18 47	0.00 0	0.00 0	0.00 0	31.18 47	31.18
HAM	SKILLED CRAFT SUPERVISOR - .5 ea		0.38	HR	10716	45.65 17	0.00 0	0.00 0	0.00 0	45.65 17	45.65
HAM	HP SUPERVISOR - .375 ea		0.28	HR	10T17	51.61 15	0.00 0	0.00 0	0.00 0	51.61 15	51.61
BHI	SMALL TOOLS - 2 ea		1.51	HR	XMIIXX020	0.00 0	1.57 2	0.00 0	0.00 0	1.57 2	1.57
L BHI	Level B/Level C Consumables- 4ea		3.01	HR	Z5	0.00 0	15.00 45	0.00 0	0.00 0	15.00 45	15.00
TOTAL Obtain Hazardous & Rad Samples			278.00	SF		157	48	0	0	204	0.73

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02.08. Analysis of Rad Contam Media		QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>										
02.08. Analysis of Rad Contam Media										
02.08.08. Sludge and Solid Waste										
Notes:										
Includes only analysis of contaminated concrete and soil.										
1. LLW Samples (Mobile Lab) @ \$1,100/sample										
- 15% of contaminated soil is sampled @ 1 sample per 3.5 LCY. 90% of these samples are done by mobile lab.										
- 5% of contaminated concrete is sampled at 1 sample per 16 LCY. 100% of these samples are done by mobile lab. It is assumed that 50% of all concrete is LLW.										
2. LLW Samples (Offsite Lab) @ \$2,000/Sample										
- 15% of contaminated soil is sampled at 1 sample per 3.5 LCY. 10% of these samples are done by an offsite lab.										
3. QC Samples (Offsite Lab) @ \$2,000/Sample										
- 1 per 20 of all above samples are sent offsite as QC samples.										
BHI	Analyze LLW Sample (Mobile Lab) @ \$1,100/sample. - 5% of contaminated concrete sampled at 1 sample per 16 cu yd. 100% of concrete samples analyzed by mobile lab. 50% of concrete is assumed to be contaminated. - 15% of contaminated soil is analyzed @ 1 sample per 3.5 LCY. 15% of soil is assumed to be LLW.	2.00	EA		0.00 0	0.00 0	0.00 0	1100.00 2,200	1100.00 2,200	1100.00
BHI	Analyze LLW Sample - Off-site Lab Assume 15% of contaminated soil sampled at 1 sample per 3.5 cu yd. 10% of soil samples analyzed by off-site lab.	1.00	EA		0.00 0	0.00 0	0.00 0	2000.00 2,000	2000.00 2,000	2000.00
BHI	Analyze Quality Control Samples - Off-Site Lab Assume 1 sample per 20 samples	1.00	EA		0.00 0	0.00 0	0.00 0	2000.00 2,000	2000.00 2,000	2000.00
TOTAL Sludge and Solid Waste					----- 0	----- 0	----- 0	----- 6,200	----- 6,200	

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02.08. Analysis of Rad Contam Media			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
02.08.09. Equip, Duct, Piping & Asbestos (Sample Analysis)											
BHI	Analyze LLW Sample (Mobile Lab) @ \$1,100/sample - 15% of contaminated pipe, equipment, duct, and asbestos is sampled at the rate of one sample per seven LCY's. 90% of Rad samples are analyzed in Mobile lab.		1.00	EA		0.00 0	0.00 0	0.00 0	1100.00 1,100	1100.00 1,100	1100.00
BHI	Analyze LLW Sample (Off-site) Lab) @ \$2,000/sample - 15% of contaminated pipe, equipment, duct, and asbestos is sampled at the rate of 1 sample per 7 LCY's. 10% of these samples are sent to an offsite lab.		1.00	EA		0.00 0	0.00 0	0.00 0	2000.00 2,000	2000.00 2,000	2000.00
BHI	Analyze Quality Control Samples (Off-Site Lab) @ \$2,000/sample - Assume 1 sample per 20 (i.e. 5%)		1.00	EA		0.00 0	0.00 0	0.00 0	2000.00 2,000	2000.00 2,000	2000.00
TOTAL Equip, Duct, Piping & Asbestos						----- 0	----- 0	----- 0	----- 5,100	----- 5,100	
TOTAL Analysis of Rad Contam Media						----- 0	----- 0	----- 0	----- 11,300	----- 11,300	

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02.09. Analysis of Haz Contamination			QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST	
<hr/>												
02.09. Analysis of Haz Contamination												
Notes:												
Assume 5% of total soil, concrete, equipment, duct and piping is analyzed at the rate of one sample per 5 cy. To develop the total quantity soil is swelled by 15% to loose cubic yards. Bank yards are used for the concrete, equipment, duct, and piping.	BHI Analyze Haz Sample - Mobile Lab @ \$200/Sample - 90% of Hazardous waste samples analyzed by mobile lab.	1.00	EA	0.00	0.00	0.00	200.00	200.00	200	200	200.00	
BHI Analyze Haz Sample (Off-site Lab) @ \$2,500/sample - 10% of Hazardous waste samples analyzed by off-site lab.	1.00	EA	0.00	0.00	0.00	2500.00	2500.00	2,500	2,500	2500.00		
BHI Analyze Quality Control Samples (Off-Site Lab) @ \$2,500/sample - Assume 1 sample per 20 samples (i.e. 5%)	1.00	EA	0.00	0.00	0.00	2500.00	2500.00	2,500	2,500	2500.00		
TOTAL Analysis of Haz Contamination			-----	-----	-----	-----	-----	-----	-----	-----		
			0	0	0	0	5,200	5,200	5,200			
TOTAL Monitoring, Sampling & Analysis			-----	-----	-----	-----	-----	-----	-----	-----		
			191	97	0	0	16,645	16,645	16,932			

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08. Solids Collection & Containment

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08.01. Excavation			QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
08. Solids Collection & Containment											
08.01. Excavation											
08.01.01. Uncontaminated Soil											
08.01.01.01. Excavate and Stockpile											
Work to be Performed:											
Excavate uncontaminated soil with backhoe. Stockpile by bulldozer.											
Assumptions:											
85% of total excavated soil is uncontaminated											
Output:											
Assumed crew productivity for this activity is 100 LCY per hour.											
HAM	HEAVY EQUIPMENT OPERATOR - 1 ea		0.58	HR	10719	39.10 23	0.00 0	0.00 0	0.00 0	39.10 23	39.10
HAM	SUPERVISOR - 1 ea		0.58	HR	10719	39.10 23	0.00 0	0.00 0	0.00 0	39.10 23	39.10
HAM	RAD CONTROL TECHNICIAN - 1 ea		0.58	HR	10T17	51.61 30	0.00 0	0.00 0	0.00 0	51.61 30	51.61
USR	TRAC HOE, CAT 245/375 (1 EA)		0.58	HR	A03	0.00 0	88.13 51	0.00 0	0.00 0	88.13 51	88.13
BHI	Level D Consumables (2 EA)		1.16	HR	Z6	0.00 0	7.50 9	0.00 0	0.00 0	7.50 9	7.50
TOTAL Excavate and Stockpile			58.00	LCY		75	60	0	0	135	2.33

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08. Solids Collection & Containment

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08.01. Excavation			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
08.01.01.02. Provide Dust Suppression											
Work to be Performed:											
Suppress dust by water spray.											
Output:											
Duration is equal to excavation duration.											
HAM	HEAVY DRIVER - 1 ea		0.58	HR	10718	35.85 21	0.00 0	0.00 0	0.00 0	35.85 21	35.85
USR	WATER TRUCK, 4000 GAL W/CANNON (1 EA)		0.58	HR	A091	0.00 0	15.63 9	0.00 0	0.00 0	15.63 9	15.63
BHI	Level D Consumables - 1 ea		0.58	HR	Z6	0.00 0	7.50 4	0.00 0	0.00 0	7.50 4	7.50
TOTAL Provide Dust Suppression			58.00	LCY		21	13	0	0	34	0.59
TOTAL Uncontaminated Soil						96	73	0	0	169	

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08. Solids Collection & Containment

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08.01. Excavation			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
08.01.02. Contaminated Soil											
08.01.02.01. Excavate and Stockpile											
Work to be Performed:											
Excavate contaminated soil with backhoe. Stockpile by bulldozer.											
Assumptions:											
1. 15% of total excavated soil is contaminated											
Output:											
Assumed crew productivity for this activity is 100 cu yd per crew hour.											
HAM	HEAVY EQUIPMENT OPERATOR - 1 ea				0.11 HR 10719	39.10 4	0.00 0	0.00 0	0.00 0	39.10 4	39.10
HAM	SUPERVISOR - 1 ea				0.11 HR 10719	39.10 4	0.00 0	0.00 0	0.00 0	39.10 4	39.10
HAM	RAD CONTROL TECHNICIAN - 1 ea				0.11 HR 10T17	51.61 6	0.00 0	0.00 0	0.00 0	51.61 6	51.61
HAM	HP SUPERVISOR - 0.25 ea				0.03 HR 10T17	51.61 1	0.00 0	0.00 0	0.00 0	51.61 1	51.61
USR	TRAC HOE, CAT 245/375 (1 ea)				0.11 HR A03	0.00 0	88.13 10	0.00 0	0.00 0	88.13 10	88.13
BHI	Level D Consumables (2 ea)				0.22 HR Z6	0.00 0	7.50 2	0.00 0	0.00 0	7.50 2	7.50
TOTAL Excavate and Stockpile			11.00	LCY		16	11	0	0	27	2.46

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08. Solids Collection & Containment

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08.01. Excavation			QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
08.01.02.02. Provide Dust Suppression											
Work to be Performed:											
Suppress dust by water spray.											
Output:											
Duration is equal to excavation duration (I.E. 200 LCY/hr)											
HAM	HEAVY DRIVER - 1 ea					35.85	0.00	0.00	0.00	35.85	
			0.06	HR	10718	2	0	0	0	2	35.85
USR	WATER TRUCK, 4000 GAL W/CANNON (1 EA)					0.00	15.63	0.00	0.00	15.63	
			0.06	HR	A091	0	1	0	0	1	15.63
BHI	Level D Consumables (1 ea)					0.00	7.50	0.00	0.00	7.50	
			0.06	HR	Z6	0	0	0	0	0	7.50
TOTAL Provide Dust Suppression			11.00	LCY		2	1	0	0	3	0.29
<hr/>											
TOTAL Contaminated Soil											
						18	13	0	0	30	
TOTAL Excavation											
						114	86	0	0	200	
TOTAL Solids Collection & Containment											
						114	86	0	0	200	

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17. Decon and Decommissioning (D&D)

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17.01. Pre-Decommissioning Operations			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17. Decon and Decommissioning (D&D)											
17.01. Pre-Decommissioning Operations											
17.01.01. Prepare Decommissioning Plan											
17.01.01.01. EE/CA											
Notes:											
The EE/CA is a DOE document that is addressed to the lead regulatory agency to study various removal actions and disposal alternatives. The document compares cost, environmental consequences and states what ARARs (Applicable or Relevant and Appropriate Requirements) will be addressed for each alternative. It is assumed that each EE/CA report will represent 10 buildings.											
ERC	ERC	LEAD ENGINEER				60.25	0.00	0.00	0.00	60.25	
			1.50	HR	31000	90	0	0	0	90	60.25
ERC	ERC	PROJECT MANAGEMENT				74.98	0.00	0.00	0.00	74.98	
			1.50	HR	51000	112	0	0	0	112	74.98
ERC	ERC	ENVIRONMENTAL ENGINEER				28.39	0.00	0.00	0.00	28.39	
			0.70	HR	55000	20	0	0	0	20	28.39
USR	ERC	ADMINISTRATION				28.39	0.00	0.00	0.00	28.39	
			1.50	HR	55000	43	0	0	0	43	28.39
USR	ERC	CHARACTERIZATION ENGINEER				28.39	0.00	0.00	0.00	28.39	
			3.00	HR	55000	85	0	0	0	85	28.39
USR	ERC	REGULATORY ENGINEER				28.39	0.00	0.00	0.00	28.39	
			5.50	HR	55000	156	0	0	0	156	28.39
TOTAL EE/CA						507	0	0	0	507	

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17. Decon and Decommissioning (D&D)

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17.01. Pre-Decommissioning Operations	QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>									
17.01.01.02. Action Memorandum									
Notes:									
The Action Memorandum is a document generated by the lead regulatory agency, in response to a specific EE/CA, stating the selected alternative with its specific ARARs.									
ERC	ERC REGULATORY ENGINEER			60.25	0.00	0.00	0.00	60.25	
		2.00	HR	31000	121	0	0	121	60.25
<hr/>									
TOTAL Action Memorandum									
				121	0	0	0	121	

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17. Decon and Decommissioning (D&D)

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17.01. Pre-Decommissioning Operations			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17.01.01.03. Readiness Evaluation											
Notes: This item is used to document that the project task team and management have completed/addressed all relevant items before conducting the task. It is assumed that each Readiness Evaluation represents 5 buildings.											
ERC	ERC LEAD ENGINEER		6.00	HR	32000	65.03 390	0.00 0	0.00 0	0.00 0	65.03 390	65.03
ERC	ERC RAD CONTROL ENGINEER		2.40	HR	31000	60.25 145	0.00 0	0.00 0	0.00 0	60.25 145	60.25
ERC	ERC QUALITY ASSURANCE		4.00	HR	52000	63.43 254	0.00 0	0.00 0	0.00 0	63.43 254	63.43
ERC	ERC PROJECT MANAGEMENT		2.40	HR	51000	74.98 180	0.00 0	0.00 0	0.00 0	74.98 180	74.98
ERC	ERC SAFETY AND HEALTH		2.40	HR	58000	56.44 135	0.00 0	0.00 0	0.00 0	56.44 135	56.44
ERC	ERC FIELD SUPPORT		6.00	HR	53000	50.32 302	0.00 0	0.00 0	0.00 0	50.32 302	50.32
ERC	ERC AREA SUPERINTENDENT		1.00	HR	53000	50.32 50	0.00 0	0.00 0	0.00 0	50.32 50	50.32
ERC	ERC ADMINISTRATIVE SERVICES		1.00	HR	55000	28.39 28	0.00 0	0.00 0	0.00 0	28.39 28	28.39
TOTAL Readiness Evaluation						1,485	0	0	0	1,485	

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17.01. Pre-Decommissioning Operations			QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>									
17.01.01.04. Hazard Classification									
<i>Note:</i> The Hazard Classification document calculates the total hazardous and radiological inventory and then compares those values to the specific sited quantities for each isotope or material.									
ERC	ERC LEAD ENGINEER		40.00 HR 32000	65.03 2,601	0.00 0	0.00 0	0.00 0	65.03 2,601	65.03
ERC	ERC ENVIRONMENTAL ENGINEER		20.00 HR 31000	60.25 1,205	0.00 0	0.00 0	0.00 0	60.25 1,205	60.25
TOTAL Hazard Classification				3,806	0	0	0	3,806	

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17.01. Pre-Decommissioning Operations		QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>										
17.01.01.05. Plant Force Work Review (PFWR)										
Note: This documentation is needed to determine what scope within a project will be performed by established union plant forces and/or what will be subcontracted. It is assumed that each PFWR represents 5 buildings.										
ERC	ERC FIELD SUPPORT	8.00	HR	53000	50.32 403	0.00 0	0.00 0	0.00 0	50.32 403	50.32
ERC	ERC LEAD ENGINEER	0.40	HR	32000	65.03 26	0.00 0	0.00 0	0.00 0	65.03 26	65.03
TOTAL Plant Force Work Review (PFWR)						429	0	0	0	429

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17. Decon and Decommissioning (D&D)

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17.01. Pre-Decommissioning Operations			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17.01.01.06. Remediation Schedule and Est.											
Note: This activity is developed by project specific engineers, field support personnel, and estimators to estimate the cost and duration for the remediation portion of the project. It is assumed that each remediation schedule and estimate represents 5 buildings.											
ERC	ERC ESTIMATOR		5.00	HR	21000	56.04 280	0.00 0	0.00 0	0.00 0	56.04 280	56.04
ERC	ERC LEAD ENGINEER		5.00	HR	32000	65.03 325	0.00 0	0.00 0	0.00 0	65.03 325	65.03
ERC	ERC FIELD SUPPORT		5.00	HR	53000	50.32 252	0.00 0	0.00 0	0.00 0	50.32 252	50.32
ERC	ERC COST/SCHEDULING ENGINEER		5.00	HR	21000	56.04 280	0.00 0	0.00 0	0.00 0	56.04 280	56.04
TOTAL Remediation Schedule and Est.						1,137	0	0	0	1,137	

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17. Decon and Decommissioning (D&D)

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17.01. Pre-Decommissioning Operations		QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>										
17.01.01.07. Biological Resource Review										
<i>Note:</i> This activity consists of studies to determine if there are potential effects to biological/ecological sensitive items on the project/vicinity.										
ERC	ERC ENVIRONMENTAL ENGINEER	15.00	HR	31000	60.25 904	0.00 0	0.00 0	0.00 0	60.25 904	60.25
ERC	ERC LEAD ENGINEER	7.00	HR	32000	65.03 455	0.00 0	0.00 0	0.00 0	65.03 455	65.03
TOTAL Biological Resource Review						1,359	0	0	0	1,359

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17. Decon and Decommissioning (D&D)

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17.01. Pre-Decommissioning Operations	QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>									
17.01.01.08. Cultural Resource Review									
Note: This activity consists of studies to determine if there are potential effects to culturally sensitive items on the project/vicinity.									
ERC	ERC LEAD ENGINEER	7.00	HR	32000	65.03 455	0.00 0	0.00 0	0.00 0	65.03 455
ERC	ERC ENVIRONMENTAL ENGINEER	15.00	HR	35000	63.43 951	0.00 0	0.00 0	0.00 0	63.43 951
TOTAL Cultural Resource Review					1,407	0	0	0	1,407

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PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
17. Decon and Decommissioning (D&D)

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17.01. Pre-Decommissioning Operations			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17.01.01.09. Work Package Development											
Note: This item provides a descriptive working document of how work will be performed in the field.											
ERC	ERC FIELD SUPPORT		75.00	HR	53000	50.32 3,774	0.00 0	0.00 0	0.00 0	50.32 3,774	50.32
ERC	ERC SAFTY AND HEALTH		13.00	HR	58000	56.44 734	0.00 0	0.00 0	0.00 0	56.44 734	56.44
ERC	ERC RAD CONTROL ENGINEER		13.00	HR	31000	60.25 783	0.00 0	0.00 0	0.00 0	60.25 783	60.25
ERC	ERC LEAD ENGINEER		7.00	HR	32000	65.03 455	0.00 0	0.00 0	0.00 0	65.03 455	65.03
TOTAL Work Package Development						5,746	0	0	0	5,746	

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17.01. Pre-Decommissioning Operations	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>							
17.01.01.10. Waste Designation							
Note: This document uses sample and survey data to determine what waste streams meet the acceptance criteria of a particular disposal facility.							
ERC	ERC LEAD ENGINEER	5.00 HR 32000	65.03 325	0.00 0	0.00 0	0.00 0	65.03 325
ERC	ERC FIELD SUPPORT	20.00 HR 53000	50.32 1,006	0.00 0	0.00 0	0.00 0	50.32 1,006
TOTAL Waste Designation			1,332	0	0	0	1,332

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17.01. Pre-Decommissioning Operations	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>							
17.01.01.11. Waste Profile							
Note: This document uses sample and survey data to determine what waste streams meet the acceptance criteria of a particular disposal facility.							
ERC	ERC LEAD ENGINEER	5.00 HR 32000	65.03 325	0.00 0	0.00 0	0.00 0	65.03 325
ERC	ERC FIELD SUPPORT	20.00 HR 53000	50.32 1,006	0.00 0	0.00 0	0.00 0	50.32 1,006
TOTAL Waste Profile			1,332	0	0	0	1,332

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17.01. Pre-Decommissioning Operations		QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>										
17.01.01.12. HASP (Health & Safety Plan)										
Note: This document is used in the field to address various safety concerns, including worker training, hazards identification, PPE (Personal Protective Equipment), facility conditions, etc.										
ERC	ERC SAFTY AND HEALTH	40.00	HR	58000	56.44 2,258	0.00 0	0.00 0	0.00 0	56.44 2,258	56.44
ERC	ERC FIELD SUPPORT	15.00	HR	53000	50.32 755	0.00 0	0.00 0	0.00 0	50.32 755	50.32
TOTAL HASP (Health & Safety Plan)						3,012	0	0	0	3,012

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17.01. Pre-Decommissioning Operations	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>							
17.01.01.13. Site Specific Waste Mgmt. Inst. (SSWMI) Site Specific Waste Management Instructions							
<p>Note: This documentaiton provides guidance on how various waste streams will be managed through disposal.</p>							
ERC	ERC FIELD SUPPORT	15.00 HR 53000	50.32 755	0.00 0	0.00 0	0.00 0	50.32 755
TOTAL Site Specific Waste Mgmt. Inst.			755	0	0	0	755

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17.01. Pre-Decommissioning Operations			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17.01.01.14. BARCT Determination/Acceptance (Best Available Radionuclide Control Technology)											
<hr/>											
ERC	ERC LEAD ENGINEER		20.00	HR	32000	65.03 1,301	0.00 0	0.00 0	0.00 0	65.03 1,301	65.03
ERC	ERC REGULATORY ENGINEER		10.00	HR	35000	63.43 634	0.00 0	0.00 0	0.00 0	63.43 634	63.43
ERC	ERC PROJECT MANAGEMENT		5.00	HR	51000	74.98 375	0.00 0	0.00 0	0.00 0	74.98 375	74.98
ERC	ERC ENVIRONMENTAL ENGINEER		25.00	HR	35000	63.43 1,586	0.00 0	0.00 0	0.00 0	63.43 1,586	63.43
TOTAL BARCT Determination/Acceptance						3,896	0	0	0	3,896	

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17.01. Pre-Decommissioning Operations				QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>												
17.01.01.15. Removal Design Report (RDR)												
<i>Note:</i> The Removal Design Report is a document that addresses the ARARS set by the action Memorandum, acts as a design report/project plan, and acts as the project management plan for a specific project under an Action Memorandum.												
ERC	ERC LEAD ENGINEER			180.00	HR	32000	65.03 11,705	0.00 0	0.00 0	0.00 0	65.03 11,705	65.03
ERC	ERC ENVIRONMENTAL ENGINEER			25.00	HR	35000	63.43 1,586	0.00 0	0.00 0	0.00 0	63.43 1,586	63.43
ERC	ERC REGULATORY SUPPORT			30.00	HR	35000	63.43 1,903	0.00 0	0.00 0	0.00 0	63.43 1,903	63.43
ERC	ERC FIELD SUPPORT			65.00	HR	53000	50.32 3,271	0.00 0	0.00 0	0.00 0	50.32 3,271	50.32
ERC	ERC QUALITY ASSURANCE			12.00	HR	52000	63.43 761	0.00 0	0.00 0	0.00 0	63.43 761	63.43
ERC	ERC SAFETY AND HEALTH			30.00	HR	58000	56.44 1,693	0.00 0	0.00 0	0.00 0	56.44 1,693	56.44
ERC	ERC ADMINISTRATIVE SERVICES			10.00	HR	55000	28.39 284	0.00 0	0.00 0	0.00 0	28.39 284	28.39
TOTAL Removal Design Report (RDR)							21,203	0	0	0	21,203	
TOTAL Prepare Decommissioning Plan							47,524	0	0	0	47,524	

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17.01. Pre-Decommissioning Operations	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>							
17.01.02. Rad. Work Permit (RWP)/ Tech. Assessment (TA)							
<hr/>							
ERC ERC RAD CONTROL ENGINEER	30.00 HR 31000	60.25 1,808	0.00 0	0.00 0	0.00 0	60.25 1,808	60.25
TOTAL Rad. Work Permit (RWP)/ Tech.		1,808	0	0	0	1,808	

Note:

The Radiological Work Permit addresses how radiation surveys shall be conducted for certain activities. The Technical Assessment provides a brief radiological history of the facility which is then used to write the RWP.

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17.01. Pre-Decommissioning Operations			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17.01.03. Haz Mat'l & Radioactivity Survey and Development of Exposure Controls											
17.01.03.01. Sampling & Analysis Plan											
Output: Duration for this activity is 45 crew days.											
M BHI	Allowance for Printing and Copying		1.00	LS		0.00 0	0.00 0	324.00 324	0.00 0	324.00 324	324.00
ERC	ERC HP & CHARACTERIZATION ENGR - .2 ea	61.20	HR	31000		60.25 3,687	0.00 0	0.00 0	0.00 0	60.25 3,687	60.25
ERC	ERC PROJECT MANAGEMENT - 0.05 ea	18.00	HR	51000		74.98 1,350	0.00 0	0.00 0	0.00 0	74.98 1,350	74.98
ERC	ERC ADMIN. SERVICES .05 ea	18.00	HR	55000		28.39 511	0.00 0	0.00 0	0.00 0	28.39 511	28.39
TOTAL Sampling & Analysis Plan			360.00	HR		5,548	0	324	0	5,872	16.31

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17.01. Pre-Decommissioning Operations			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17.01.03.03. Characterization Report											
Work to be Performed:											
Prepare a characterization report specific for the building. The report will include an executive summary, description of the facility, survey parameters, building illustrations, survey results, instrument information, and isotopic analysis. It is assumed that the report will contain some degree of "boilerplate" material as well as building specific information. This includes review and revision of the Characterization Report.											
Output:											
Duration for this activity is 16 base crew hours plus 1.6 crew hours per 1000 sf of gross building area.											
ERC	ERC HP & CHARACTERIZATION ENGR - 1 ea		17.00	HR	31000	60.25 1,024	0.00 0	0.00 0	0.00 0	60.25 1,024	60.25
ERC	ERC PROJECT MANAGEMENT - 0.25 ea OUTYEAR		4.25	HR	51000	74.98 319	0.00 0	0.00 0	0.00 0	74.98 319	74.98
ERC	ERC ADMIN SERVICES (.25 ea) OUTYEAR		4.25	HR	55000	28.39 121	0.00 0	0.00 0	0.00 0	28.39 121	28.39
M BHI	Allowance for Printing and Copying		1.00	LS		0.00 0	0.00 0	324.00 324	0.00 0	324.00 324	324.00
TOTAL Characterization Report			17.00	HR		1,464	0	324	0	1,788	105.15
TOTAL Haz Mat'l & Radioactivity Survey						7,012	0	648	0	7,660	
TOTAL Pre-Decommissioning Operations						56,343	0	648	0	56,991	

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17.04. Dismantling Activities			QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17.04. Dismantling Activities											
17.04.13. Remove Material and Equipment from Containment Structure											
17.04.13.01. Remove Material & Equipment											
<p>Work to be Performed: Dislodge or detach equipment as necessary. Downsize by disassembly, cutting, or other means and remove from immediate area. Quantity includes all equipment, duct and piping.</p>											
<p>Output: Assumed crew productivity for this activity is 200 cf per crew day or 25 cf per crew hr . 2 crews are assumed resulting in 50 cf/hr for duration calculations (See DURDIS parameter)</p>											
<p>Assumptions: 1. Equipment density will be defined by a user input. 2. 15 lf pipe per 100 sf of gross building area. 3. Average pipe diameter = 8". 4. Pipe volume gain of 10%. 5. 25 lf of duct per 100 sf of gross building area. 6. Average duct size of 20"x20". 7. Duct volume reduction of 30%.</p>											
HAM	RAD CONTROL TECHNICIANS - 1 ea		14.00	HR	10T17	51.61 723	0.00 0	0.00 0	0.00 0	51.61 723	51.61
HAM	D & D WORKER - 3 ea		42.00	HR	10715	31.18 1,310	0.00 0	0.00 0	0.00 0	31.18 1,310	31.18
HAM	D & D SUPERVISOR - 1 ea		14.00	HR	10715	31.18 437	0.00 0	0.00 0	0.00 0	31.18 437	31.18
HAM	INDUSTRIAL HYGIENE TECH - .25 ea		3.50	HR	10T17	51.61 181	0.00 0	0.00 0	0.00 0	51.61 181	51.61
BHI	Small Tools - 3 ea		42.00	HR	XMIIXX020	0.00 0	1.57 66	0.00 0	0.00 0	1.57 66	1.57
USR	MANLIFT-SCISSOR, 36' (1 EA)		14.00	HR	A093	0.00 0	14.05 197	0.00 0	0.00 0	14.05 197	14.05
BHI	Level D Consumables, (4 ea)		56.00	HR	Z6	0.00 0	7.50 420	0.00 0	0.00 0	7.50 420	7.50
TOTAL Remove Material & Equipment			350.00	LCF		2,649	683	0	0	3,332	9.52

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17.04. Dismantling Activities			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17.04.13.02. Package/Transfer Rad Contam Eqmt											
Work to be Performed:											
Waste is packaged for transfer to the staging area in ERDF containers.											
Output:											
Assumed productivity for this task is 60 LCF per crew hour.											
HAM	RAD CONTROL TECHNICIANS - 1 ea		0.88	HR	10T17	51.61 46	0.00 0	0.00 0	0.00 0	51.61 46	51.61
HAM	D & D WORKER - 3 ea		2.65	HR	10715	31.18 83	0.00 0	0.00 0	0.00 0	31.18 83	31.18
HAM	HP SUPERVISOR (.25 EA)		0.22	HR	10T17	51.61 11	0.00 0	0.00 0	0.00 0	51.61 11	51.61
HAM	D & D SUPERVISOR - 1 ea		0.88	HR	10715	32.36 29	0.00 0	0.00 0	0.00 0	32.36 29	32.36
USR	FORKLIFT, RIDING, 12,000 LB (1 EA)		0.88	HR	A092	0.00 0	5.76 5	0.00 0	0.00 0	5.76 5	5.76
BHI	Small Tools - 3 ea		2.65	HR	XMIIXX020	0.00 0	1.57 4	0.00 0	0.00 0	1.57 4	1.57
L BHI	Level B/Level C Consumables - 4 ea		3.53	HR	Z5	0.00 0	15.00 53	0.00 0	0.00 0	15.00 53	15.00
TOTAL Package/Transfer Rad Contam Eqmt			53.00	LCF		168	62	0	0	230	4.35
TOTAL Remove Material and Equipment						2,817	745	0	0	3,562	

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17.04. Dismantling Activities		QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>								
17.04.14. Remove and Package Asbestos								
17.04.14.01. Floor & Ceiling Asbestos Removal								
Work to be Performed: Remove, package, and stage asbestos floor tiles and ceiling tiles. Air monitoring is conducted under another activity.								
Assumptions: 1. 10% of the floor and ceiling area contain asbestos tile, based on gross building area.								
Output: Assumed crew output is 80 sq ft per hr. 2 crews are assumed resulting in 160 sf/hr for duration calculations (See ASBDUR parameter).								
HAM	RAD CONTROL TECHNICIAN - 1 ea	0.70 HR 10T17	51.61 36	0.00 0	0.00 0	0.00 0	51.61 36	51.61
HAM	HP SUPERVISOR - 0.25 ea	0.17 HR 10T17	51.61 9	0.00 0	0.00 0	0.00 0	51.61 9	51.61
HAM	D & D WORKER - 3 ea	2.09 HR 10715	31.18 65	0.00 0	0.00 0	0.00 0	31.18 65	31.18
HAM	D & D SUPERVISOR - 1 ea	0.70 HR 10715	31.18 22	0.00 0	0.00 0	0.00 0	31.18 22	31.18
BHI	Small Tools - 3 ea	2.09 HR XMIXX020	0.00 0	1.57 3	0.00 0	0.00 0	1.57 3	1.57
USR	MANLIFT-SCISSOR, 36' (1 EA)	0.70 HR A093	0.00 0	14.05 10	0.00 0	0.00 0	14.05 10	14.05
L BHI	Level B/Level C Consumables (4 ea)	2.78 HR Z5	0.00 0	15.00 42	0.00 0	0.00 0	15.00 42	15.00
M BHI	Allowance for Packaging Materials and Supplies	0.70 HR	0.00 0	108.00 75	0.00 0	108.00 75	108.00 75	108.00
TOTAL Floor & Ceiling Asbestos Removal		55.60 SF	132	55	75	0	261	4.70

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17.04. Dismantling Activities			QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>									
17.04.14.02. Pipe Asbestos Removal									
Work to be Performed:									
Remove, package, and stage asbestos pipe insulation (pipe included).									
Air monitoring is conducted under another activity.									
Assumptions:									
1. User will input quantity. Default quantity is 10 lf per 100 sf of gross building area.									
Output:									
Assumed crew output is 15 lf per hr. 2 crews are assumed resulting in 30 lf/hr for duration calculations (See ASBDUR parameter).									
HAM	RAD CONTROL TECHNICIAN - 1 ea		1.87 HR 10T17	51.61 96	0.00 0	0.00 0	0.00 0	51.61 96	51.61
M BHI	Allowance for Packaging Materials and Supplies		1.87 HR	0.00 0	0.00 0	108.00 202	0.00 0	108.00 202	108.00
HAM	HP SUPERVISOR - 0.25 ea		0.47 HR 10T17	51.61 24	0.00 0	0.00 0	0.00 0	51.61 24	51.61
HAM	D & D WORKER - 3 ea		5.60 HR 10715	31.18 175	0.00 0	0.00 0	0.00 0	31.18 175	31.18
HAM	D & D SUPERVISOR - 1 ea		1.87 HR 10715	31.18 58	0.00 0	0.00 0	0.00 0	31.18 58	31.18
BHI	Small Tools - 3 ea		5.60 HR XMIXX020	0.00 0	1.57 9	0.00 0	0.00 0	1.57 9	1.57
USR	MANLIFT-SCISSOR, 36' (1 EA)		1.87 HR A093	0.00 0	14.05 26	0.00 0	0.00 0	14.05 26	14.05
L BHI	Level B/Level C Consumables (4 ea)		7.47 HR Z5	0.00 0	15.00 112	0.00 0	0.00 0	15.00 112	15.00
TOTAL Pipe Asbestos Removal			28.00 LF	353	147	202	0	702	25.07

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17.04. Dismantling Activities			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17.04.14.03. Duct Asbestos Removal											
<hr/>											
Work to be Performed: Remove, package, and stage asbestos duct insulation. Air monitoring is conducted under another activity.											
<hr/>											
Assumptions: 1. Quantity based on user input. Default quantity = 2/3 gross building area.											
<hr/>											
Output: Assumed crew output is 50 sq ft per hr. 2 crews are assumed resulting in 100 sf/hr for duration calculations (See ASBDUR parameter).											
<hr/>											
HAM	RAD CONTROL TECHNICIAN (1 ea)					51.61 192	0.00 0	0.00 0	0.00 0	51.61 192	51.61
HAM	HP SUPERVISOR - 0.25 ea					51.61 48	0.00 0	0.00 0	0.00 0	51.61 48	51.61
HAM	D & D WORKER - 3 ea					31.18 348	0.00 0	0.00 0	0.00 0	31.18 348	31.18
HAM	D & D SUPERVISOR - 1 ea					31.18 116	0.00 0	0.00 0	0.00 0	31.18 116	31.18
BHI	Small Tools - 3 ea					0.00 0	1.57 18	0.00 0	0.00 0	1.57 18	1.57
USR	MANLIFT-SCISSOR, 36' (1 EA)					0.00 0	14.05 52	0.00 0	0.00 0	14.05 52	14.05
L BHI	Level B/Level C Consumables - 4 ea					0.00 0	15.00 223	0.00 0	0.00 0	15.00 223	15.00
M BHI	Allowance for Packaging Materials and Supplies					0.00 0	0.00 0	108.00 402	0.00 0	108.00 402	108.00
TOTAL Duct Asbestos Removal			186.00	SF		704	293	402	0	1,399	7.52
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TOTAL Remove and Package Asbestos						1,189	495	678	0	2,362	

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17.04. Dismantling Activities				QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>												
17.04.16. Reduce Contamination from Areas and Structures												
17.04.16.01. Surface Decontamination												
Work to be Performed: Decontaminate building and remaining equipment surfaces by various methods such as scabbling and vacuum blasting. The purpose of this activity is to further reduce building exposure levels for worker safety considerations as well as reduce air borne contamination during building dismantling operations.												
Assumptions: .5% of total interior surface area will require decontamination.												
Output: Assumed productivity for this activity is 60 sq ft per crew day (i.e. 7.5 SF/HR). 2 crews are assumed resulting in 15 sf/hr for duration calculations (See DURDIS parameter).												
HAM	RAD CON TECHNICIAN - 1 ea			0.73	HR	10T17	51.61 38	0.00 0	0.00 0	0.00 0	51.61 38	51.61
HAM	D & D WORKER - 3 ea			2.20	HR	10715	31.18 68	0.00 0	0.00 0	0.00 0	31.18 68	31.18
HAM	HP SUPERVISOR - 0.25 ea			0.18	HR	10T17	51.61 9	0.00 0	0.00 0	0.00 0	51.61 9	51.61
HAM	INDUSTRIAL HYGIENE TECH - .25 ea			0.18	HR	10T17	51.61 9	0.00 0	0.00 0	0.00 0	51.61 9	51.61
HAM	D & D SUPERVISOR - 1 ea			0.73	HR	10715	31.18 23	0.00 0	0.00 0	0.00 0	31.18 23	31.18
L BHI	Level B/Level C Consumables - 4 ea			2.93	HR	Z5	0.00 0	15.00 44	0.00 0	0.00 0	15.00 44	15.00
BHI	Decontamination Equipment - 1 ea			0.73	HR	Y2	0.00 0	30.00 22	0.00 0	0.00 0	30.00 22	30.00
BHI	Small Tools - 3 ea			2.20	HR	XMIIXX020	0.00 0	1.57 3	0.00 0	0.00 0	1.57 3	1.57
M BHI	Allowance for Packaging Materials and Supplies			0.73	HR		0.00 0	0.00 0	27.00 20	0.00 0	27.00 20	27.00
TOTAL Surface Decontamination				5.49	SF		148	69	20	0	237	43.18

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17.04. Dismantling Activities			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17.04.16.03. Perform Final Radiation Survey											
Output: Assumed duration for this activity is 1 crew day.											
HAM	HEALTH PHYSICS TECHNICIAN - 2 ea		16.00	HR	10T17	51.61 826	0.00 0	0.00 0	0.00 0	51.61 826	51.61
HAM	HP SUPERVISOR - 0.25 ea		2.00	HR	10T17	51.61 103	0.00 0	0.00 0	0.00 0	51.61 103	51.61
BHI	Level D Consumables (2 ea)		16.00	HR	Z6	0.00 0	7.50 120	0.00 0	0.00 0	7.50 120	7.50
TOTAL Perform Final Radiation Survey			8.00	HR		929	120	0	0	1,049	131.12
TOTAL Reduce Contamination from Areas						1,077	189	20	0	1,286	

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17.04. Dismantling Activities			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17.04.24. Remove Hazardous Materials											
17.04.24.01. Remove Hazardous Materials											
<hr/>											
Work to be Performed: Remove hazardous materials such as mercury, lead and PCBs from building. Haz waste will be packaged in drums and transferred to a local staging area for disposal under a different activity. The purpose of this activity is to further reduce building exposure levels for worker safety considerations during building dismantling activities.											
Assumption: 5% of gross building area contains hazardous waste.											
Output: Assumed productivity for this activity is 60 cu ft per crew day (I.E. 7.5 CF/HR)											
HAM	RAD CONTROL TECHNICIAN - 1 ea		0.53	HR	10T17	51.61 28	0.00 0	0.00 0	0.00 0	51.61 28	51.61
HAM	D & D WORKER - 3 ea		1.60	HR	10715	31.18 50	0.00 0	0.00 0	0.00 0	31.18 50	31.18
HAM	HP SUPERVISOR - 0.25 ea		0.13	HR	10T17	51.61 7	0.00 0	0.00 0	0.00 0	51.61 7	51.61
HAM	INDUSTRIAL HYGIENE TECH - 1 ea		0.53	HR	10T17	51.61 28	0.00 0	0.00 0	0.00 0	51.61 28	51.61
HAM	D & D SUPERVISOR - 1 ea		0.53	HR	10715	31.18 17	0.00 0	0.00 0	0.00 0	31.18 17	31.18
L BHI	Level B/Level C Consumables - 4 ea		2.13	HR	Z5	0.00 0	15.00 32	0.00 0	0.00 0	15.00 32	15.00
BHI	Decontamination Equipment - 1 ea		0.53	HR	Y2	0.00 0	30.00 16	0.00 0	0.00 0	30.00 16	30.00
BHI	Small Tools - 3 ea		1.60	HR	XMIIXX020	0.00 0	1.57 3	0.00 0	0.00 0	1.57 3	1.57
M BHI	Allowance for Packaging Materials and Supplies		0.53	HR		0.00 0	0.00 0	27.00 14	0.00 0	27.00 14	27.00
TOTAL Remove Hazardous Materials			4.00	CF		128	51	14	0	193	48.34

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17.04. Dismantling Activities			QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
17.04.24.02. Transport/Dispose of Haz Waste											
Work to be Performed:											
Transport and dispose of hazardous and mixed waste. Waste will be brought to local Treatment, Storage and Disposal Facility.											
Assumptions:											
1. Hazardous waste density is .25 cf/sf. 2. Haz waste will be transported in drums 7.5 cf/ea. 3. Assume up to 64 drums to a truckload - 480 cf. 4. Assume 15% of Haz Waste is Mixed Waste.											
Output: One 480 cf truckload per day (60 cf/crew hour)											
HAM	HEAVY DRIVER - 1 ea					35.85	0.00	0.00	0.00	35.85	
		0.07 HR	10718			2	0	0	0	2	35.85
USR	TRUCK/TRACTOR (1 EA)					0.00	30.31	0.00	0.00	30.31	
		0.07 HR	A08			0	2	0	0	2	30.31
USR	TRAILER, FLATBED (1 EA)					0.00	1.25	0.00	0.00	1.25	
		0.07 HR	A07			0	0	0	0	0	1.25
BHI	Hazardous Waste Disposal Fee Includes cost of drum and shipper labor.					0.00	0.00	0.00	188.00	188.00	
		3.00 CF				0	0	0	564	564	188.00
BHI	Mixed Waste Disposal Fee Includes cost of drum and shipper labor.					0.00	0.00	0.00	172.00	172.00	
		1.00 CF				0	0	0	172	172	172.00
TOTAL Transport/Dispose of Haz Waste			4.00 CF			2	2	0	736	740	185.12
TOTAL Remove Hazardous Materials											
						131	53	14	736	934	

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17.04. Dismantling Activities	QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>									
17.04.25. Dismantle Building Structure									
17.04.25.01. Dismantle Masonry Walls									
Output:									
Duration is 3 days.									
TOTAL Dismantle Masonry Walls		HR		0	0	0	0	0	0
TOTAL Dismantle Building Structure				0	0	0	0	0	0
TOTAL Dismantling Activities				5,214	1,482	713	736	8,144	

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17.90. Recycled Waste			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17.90. Recycled Waste											
17.90.01. Concrete Rubble											
17.90.01.01. Load/Haul Concrete & Masonry											
Rubble to Recycling Plant											
Notes:											
1. 50% of total concrete and masonry volume will be recycled.											
2. 10 mile haul to recycling plant											
Output:											
40 CY per crew hour											
HAM	HEAVY EQUIPMENT OPERATOR (1 ea)		0.15	HR	10719	39.10 6	0.00 0	0.00 0	0.00 0	39.10 6	39.10
HAM	D & D WORKER (1 ea)		0.15	HR	10715	31.18 5	0.00 0	0.00 0	0.00 0	31.18 5	31.18
HAM	HEAVY DRIVER (3 ea)		0.45	HR	10718	35.85 16	0.00 0	0.00 0	0.00 0	35.85 16	35.85
USR	FE LOADER, CAT 980-G, 7 CY 1 ea		0.15	HR	A05	0.00 0	25.00 4	0.00 0	0.00 0	25.00 4	25.00
USR	TRUCK-DUMP, 15 CY (3 ea)		0.45	HR	A09	0.00 0	23.75 11	0.00 0	0.00 0	23.75 11	23.75
UPB	SMALL TOOLS (1 EA)		0.15	HR	XMIIXX020	0.00 0	1.57 0	0.00 0	0.00 0	1.57 0	1.57
TOTAL Load/Haul Concrete & Masonry			6.00	LCY		27	15	0	0	41	6.89
TOTAL Concrete Rubble						27	15	0	0	41	

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17.90. Recycled Waste			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
17.90.02. Steel from Building Structure											
17.90.02.01. Load/Haul Steel to Recycle Plant											
Notes:											
1. 100% of total steel volume will be recycled through an off-site contractor.											
Output:											
15 ton per crew hour											
HAM	HEAVY EQUIPMENT OPERATOR (1 ea)		0.07	HR	10719	39.10 3	0.00 0	0.00 0	0.00 0	39.10 3	39.10
USR	TRAC HOE, CAT 245/375 (1 ea)		0.07	HR	A03	0.00 0	88.13 6	0.00 0	0.00 0	88.13 6	88.13
USR	UP-70 ATTACHMENT, FOR CAT 245 To account for the shear attachment. (1 ea)		0.07	HR	A04	0.00 0	71.88 5	0.00 0	0.00 0	71.88 5	71.88
TOTAL Load/Haul Steel to Recycle Plant			1.00	TON		----- 3	----- 11	----- 0	----- 0	----- 13	13.28
TOTAL Steel from Building Structure						----- 3	----- 11	----- 0	----- 0	----- 13	
TOTAL Recycled Waste						----- 29	----- 25	----- 0	----- 0	----- 55	
TOTAL Decon and Decommissioning (D&D)						61,587	1,507	1,361	736	65,190	

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		QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>										
18.03. Transport to Storage/Disposal										
<hr/>										
18. Disposal										
18.03. Transport to Storage/Disposal										
Facility										
18.03.01. Trans/Disp. Pipe, Equip, & Duct										
to Clean Disposal Landfill										
 Work to be Performed:										
Load/haul miscellaneous equipment, pipe, and duct. from building staging area to clean disposal landfill.										
 Assumptions:										
1. Equipment density is user defined. Default is 1 cf/sf of gross building area.										
2. 15 lf pipe per 100 sq ft gross building area										
3. Average pipe diameter of 8 in										
4. Pipe volume gain of 10%										
5. 25 lf duct per 100 sq ft gross building area										
6. Average duct size of 20 in x 20 in										
7. Duct volume reduction of 30%										
8. Disposal fee covers both transportation and disposal costs (assumed @ \$8.75/CY)										
 Output:										
Assumed crew productivity for this activity is 7.5 cu yd per hour (i.e. 60 cu yd./day)										
HAM	D & D WORKER - 1 ea				31.18 46	0.00 0	0.00 0	0.00 0	31.18 46	31.18
HAM	CRANE OPERATOR - 1 ea			1.47 HR 10714	43.42 64	0.00 0	0.00 0	0.00 0	43.42 64	43.42
HAM	HEAVY EQUIPMENT OPERATOR - 1 ea			1.47 HR 10719	39.10 57	0.00 0	0.00 0	0.00 0	39.10 57	39.10
HAM	D & D SUPERVISOR - (.25 ea)			0.37 HR 10715	31.18 11	0.00 0	0.00 0	0.00 0	31.18 11	31.18
HAM	RIGGER - 2 ea			2.94 HR 10734	43.58 128	0.00 0	0.00 0	0.00 0	43.58 128	43.58
BHI	Clean Landfill Disposal Fee				0.00 0	0.00 0	0.00 0	8.75 96	8.75 96	8.75
USR	CRAWLER CRANE LB 318 (1 ea)			1.47 HR A01	0.00 0	88.13 129	0.00 0	0.00 0	88.13 129	88.13
USR	TRAC HOE, CAT 245/375 (1 ea)			1.47 HR A03	0.00 0	88.13 129	0.00 0	0.00 0	88.13 129	88.13

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18.03. Transport to Storage/Disposal			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
USR	UP-70 ATTACHMENT, FOR CAT 245 (1 ea)		1.47	HR	A04	0.00 0	71.88 106	0.00 0	0.00 0	71.88 106	71.88
BHI	Small Tools - 1 ea		1.47	HR	XMIXX020	0.00 0	1.57 2	0.00 0	0.00 0	1.57 2	1.57
BHI	Level D Consumables (5 ea)		7.35	HR	Z6	0.00 0	7.50 55	0.00 0	0.00 0	7.50 55	7.50
TOTAL Trans/Disp. Pipe, Equip, & Duct			11.02	LCY		307	422	0	96	825	74.85

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18.03. Transport to Storage/Disposal			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
18.03.02. Load/Haul Contaminated Concrete											
Work to be Performed:											
This item covers the labor and equipment costs to transport Container/Truck to the site staging area. 2 Container trucks (each with a heavy truck driver) are provided in the excavation area for this activity. This rest of the haulage cost to the disposal area is captured in the \$1.59/CF (\$42.83/CY) which is the ERDF disposal fee.											
Assumptions:											
1. 50% of total concrete and masonry quantity is assumed to be contaminated.											
2. Swell factor is 60% for the concrete and 0% for the masonry.											
Output:											
20 cu yd per crew hour											
HAM	HEAVY EQUIPMENT OPERATOR - 1 ea	0.30	HR	10719		39.10 12	0.00 0	0.00 0	0.00 0	39.10 12	39.10
HAM	HEAVY DRIVER - 2 ea	0.60	HR	10718		35.85 22	0.00 0	0.00 0	0.00 0	35.85 22	35.85
HAM	RAD CONTROL TECHNICIAN (1 EA)	0.30	HR	10T17		51.61 15	0.00 0	0.00 0	0.00 0	51.61 15	51.61
MIL	TRK,HWY, 46,000 GVW, 6X4, 3 AXLE (2 ea)	0.60	HR	T50PE002		0.00 0	37.08 22	0.00 0	0.00 0	37.08 22	37.08
USR	20 Ton Tilt Trailer (For trucks to haul ERDF containers) Ref. Blue Book 1998	0.60	HR	YAL		0.00 0	3.28 2	0.00 0	0.00 0	3.28 2	3.28
USR	TRAC HOE, CAT 245/375 (1 ea)	0.30	HR	A03		0.00 0	88.13 26	0.00 0	0.00 0	88.13 26	88.13
M BHI	Supplies/Materials	6.00	CY			0.00 0	0.00 0	1.86 11	0.00 0	1.86 11	1.86
TOTAL Load/Haul Contaminated Concrete			6.00	LCY		49	51	11	0	111	18.42

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18.03. Transport to Storage/Disposal			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
18.03.03. Load/Haul Contaminated Soil											
Notes:											
Assumes two ERDF type container trucks hauling excavated LLW soil from the excavation area to the Queue area for the load/haul contaminated soil duration. Transportation/Disposal costs from the queue area to the ERDF disposal facility are covered by the LLW disposal fee, \$1.59/cf (\$42.83/cy).											
Output: 20 CY/Crew Hour											
HAM	HEAVY EQUIPMENT OPERATOR (1 EA)		0.55	HR	10719	39.10 22	0.00 0	0.00 0	0.00 0	39.10 22	39.10
HAM	HEAVY DRIVER (2 ea)		1.10	HR	10718	35.85 39	0.00 0	0.00 0	0.00 0	35.85 39	35.85
HAM	RADIATION CONTROL TECH. (1 ea)		0.55	HR	10T17	51.61 28	0.00 0	0.00 0	0.00 0	51.61 28	51.61
MIL	TRK,HWY, 46,000 GVW, 6X4, 3 AXLE (2 EA)		1.10	HR	T50PE002	0.00 0	37.08 41	0.00 0	0.00 0	37.08 41	37.08
USR	20 Ton Tilt Trailer (For trucks to haul ERDF containers) Ref. Blue Book 1998		1.10	HR	YAL	0.00 0	3.28 4	0.00 0	0.00 0	3.28 4	3.28
USR	TRAC HOE, CAT 245/375 (1 ea)		0.55	HR	A03	0.00 0	88.13 48	0.00 0	0.00 0	88.13 48	88.13
USR	Supplies/Materials Allowance		11.00	LCY		0.00 0	0.00 0	1.73 19	0.00 0	1.73 19	1.73
TOTAL Load/Haul Contaminated Soil			11.00	CY		89	93	19	0	201	18.29

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18.03. Transport to Storage/Disposal			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
18.03.04. Transport/Dispose of Rad Waste											
Work to be Performed:											
Transport all Rad contaminated waste (pipe, equipment, duct & asbestos) to ERDF from the Queue area @ 1.59/cf (\$42.83/cy). Also includes haulage from waste site to Queue area.											
Assumptions:											
1. Waste is transported from the waste site to ERDF in the ERDF container trucks.											
Output:											
Production output is based on shipping rate, not on hauling distance.											
The \$2.60 rate per CF covers all ERDF transportation and disposal costs for this activity.											
MIL	TRK,HWY, 46,000 GVW, 6x4, 3 AXLE (1 EA)	0.55	HR	T50PE002	0.00	37.08	0.00	0.00	0.00	37.08	37.08
USR	20 Ton Tilt Trailer (For trucks to haul ERDF containers) Ref. Blue Book 1998	0.55	HR	YA1	0.00	3.28	0.00	0.00	0.00	3.28	3.28
HAM	HEAVY DRIVER (1 EA)	0.55	HR	10718	35.85	0.00	0.00	0.00	0.00	35.85	35.85
USR	SUPPLIES & MAT'L ALLOWANCE (LINERS)	66.00	LCF		0.00	0.00	1.87	0.00	0.00	1.87	1.87
TOTAL Transport/Dispose of Rad Waste			66.00	LCF	20	22	123	0	0	165	2.50

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18.03. Transport to Storage/Disposal				QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>												
18.03.05. Transport Clean Asb. to Lndfill												
7.5 LCY per hour = 60 LCY/Day												
<hr/>												
Note: Assume disposal fee covers both transportation and disposal costs (\$18.80/CY)												
HAM	D & D WORKER (1 ea)			0.38	HR	10715	31.18 12	0.00 0	0.00 0	0.00 0	31.18 12	31.18
HAM	CRANE OPERATOR (1 ea)			0.38	HR	10714	43.42 17	0.00 0	0.00 0	0.00 0	43.42 17	43.42
HAM	HEAVY EQUIPMENT OPERATOR (1 ea)			0.38	HR	10719	39.10 15	0.00 0	0.00 0	0.00 0	39.10 15	39.10
HAM	D & D SUPERVISOR (.25 EA)			0.10	HR	10715	31.18 3	0.00 0	0.00 0	0.00 0	31.18 3	31.18
HAM	RIGGER (2 ea)			0.76	HR	10734	43.58 33	0.00 0	0.00 0	0.00 0	43.58 33	43.58
USR	LANDFILL DISPOSAL FEE						0.00 0	0.00 0	0.00 0	18.80 54	18.80 54	18.80
USR	CRAWLER CRANE LB 318 (1 ea)			0.38	HR	A01	0.00 0	88.13 34	0.00 0	0.00 0	88.13 34	88.13
USR	TRAC HOE, CAT 245/375 (1 ea)			0.38	HR	A03	0.00 0	88.13 34	0.00 0	0.00 0	88.13 34	88.13
USR	UP-70 ATTACHMENT, FOR CAT 245 (1 ea)			0.38	HR	A04	0.00 0	71.88 27	0.00 0	0.00 0	71.88 27	71.88
UPB	SMALL TOOLS (1 EA)			0.38	HR	XMIIXX020	0.00 0	1.57 1	0.00 0	0.00 0	1.57 1	1.57
USR	LEVEL D CONSUMABLES (5 EA)			1.90	HR		0.00 0	7.50 14	0.00 0	0.00 0	7.50 14	7.50
TOTAL Transport Clean Asb. to Lndfill				2.85	CY		79	109	0	54	242	84.91
TOTAL Transport to Storage/Disposal							544	697	153	150	1,544	
TOTAL Disposal							544	697	153	150	1,544	

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DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
20. Site Restoration

TIME 12:57:01
DETAIL PAGE 53

20.04. Revegetation and Planting			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
20. Site Restoration											
20.04. Revegetation and Planting											
20.04.01. Load/Haul Borrow											
Notes:											
1. Assume borrow available on-site. No charge for material.											
2. 10 mile haul distance.											
Output:											
75 CY per crew hour											
HAM	HEAVY EQUIPMENT OPERATOR (1 ea)		1.65	HR	10719	39.10 65	0.00 0	0.00 0	0.00 0	39.10 65	39.10
HAM	HEAVY DRIVER (6 ea)		9.92	HR	10718	35.85 356	0.00 0	0.00 0	0.00 0	35.85 356	35.85
USR	FE LOADER, CAT 980-G, 7 CY 1 ea		1.65	HR	A05	0.00 0	25.00 41	0.00 0	0.00 0	25.00 41	25.00
USR	TRUCK-DUMP, 15 CY, (5 ea)		8.27	HR	A09	0.00 0	23.75 196	0.00 0	0.00 0	23.75 196	23.75
USR	WATER TRUCK, 4000 GAL W/CANNON (1 ea)		1.65	HR	A091	0.00 0	15.63 26	0.00 0	0.00 0	15.63 26	15.63
TOTAL Load/Haul Borrow			124.00	LCY		420	264	0	0	684	5.51

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PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
20. Site Restoration

TIME 12:57:01
DETAIL PAGE 54

20.04. Revegetation and Planting			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
20.04.02. Spread/Compact Borrow and Stockpiled Soil											
<hr/>											
Output: 120 LCY/Crew Hour											
HAM	HEAVY DRIVER (1 ea)		1.52	HR	10718	35.85 54	0.00 0	0.00 0	0.00 0	35.85 54	35.85
HAM	HEAVY EQUIPMENT OPERATOR (2 ea)		3.03	HR	10719	39.10 119	0.00 0	0.00 0	0.00 0	39.10 119	39.10
HAM	SUPERVISOR (1 EA)		1.52	HR	10719	39.10 59	0.00 0	0.00 0	0.00 0	39.10 59	39.10
USR	CRAWLER TRACTOR, D8-L (1 ea)		1.52	HR	A06	0.00 0	44.64 68	0.00 0	0.00 0	44.64 68	44.64
USR	MOTOR GRADER, JOHN DEERE (1 ea)		1.52	HR	A02	0.00 0	19.40 29	0.00 0	0.00 0	19.40 29	19.40
USR	WATER TRUCK, 4000 GAL W/CANNON (1 ea)		1.52	HR	A091	0.00 0	15.63 24	0.00 0	0.00 0	15.63 24	15.63
TOTAL	Spread/Compact Borrow and		182.00	LCY		232	121	0	0	353	1.94
						-----	-----	-----	-----	-----	-----
	TOTAL Revegetation and Planting					653	384	0	0	1,037	
	TOTAL Site Restoration					653	384	0	0	1,037	

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U.S. Army Corps of Engineers
PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
21. Demobilization

TIME 12:57:01
DETAIL PAGE 55

21.04. Demobilize Temp Facilities		QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>										
21. Demobilization										
21.04. Demobilize Temp Facilities										
21.04.01. Demobilize Facilities										
21.04.01.01. Remove Temporary Constr Barrier										
Output:										
Assumed productivity for this activity is 250 lf per crew hour										
HAM	D & D WORKER - 3 ea				31.18 190	0.00 0	0.00 0	0.00 0	31.18 190	31.18
BHI	Small Tools - 3 ea				0.00 0	1.57 10	0.00 0	0.00 0	1.57 10	1.57
	TOTAL Remove Temporary Constr Barrier	507.00	LF		190	10	0	0	199	0.39
	TOTAL Demobilize Facilities		EA		190	10	0	0	199	199.25
	TOTAL Demobilize Temp Facilities				190	10	0	0	199	

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DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
21. Demobilization

TIME 12:57:01
DETAIL PAGE 56

21.91. Post Decommissioning Activities		QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>										
21.91. Post Decommissioning Activities										
21.91.01. Prepare Final D&D Report										
Preparation of the final decontamination and decommissioning report will include the following activities:										
1. Analysis and preparation										
2. Final analysis review and revision										
21.91.01.01. Analysis and Preparation										
Output:										
Assumed duration for this activity is 5 crew days (i.e. 40 Hours)										
ERC	ERC ENVIRONMENTAL ENGR - 1 ea				60.25	0.00	0.00	0.00	60.25	
	OUTYEAR	40.00	HR	31000	2,410	0	0	0	2,410	60.25
ERC	ERC ADMINISTRATIVE SERVICES .5ea				28.39	0.00	0.00	0.00	28.39	
	OUTYEAR	20.00	HR	55000	568	0	0	0	568	28.39
M BHI	Allowance for Printing and Copying				0.00	0.00	540.00	0.00	540.00	
		1.00	LS		0	0	540	0	540	540.00
TOTAL Analysis and Preparation		40.00	HR		2,978	0	540	0	3,518	87.95

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U.S. Army Corps of Engineers
PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
21. Demobilization

TIME 12:57:01
DETAIL PAGE 57

21.91. Post Decommissioning Activities			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
21.91.01.02. Final Analysis Review and Revision											
<hr/>											
Output:											
Assumed duration for this activity is 3 crew days (i.e. 24 hours)											
ERC	ERC ENVIRONMENTAL ENGR - 2 ea OUTYEAR	48.00	HR	31000		60.25 2,892	0.00 0	0.00 0	0.00 0	60.25 2,892	60.25
ERC	ERC PROJECT MANAGEMENT - 0.25 ea OUTYEAR	6.00	HR	51000		74.98 450	0.00 0	0.00 0	0.00 0	74.98 450	74.98
ERC	ERC SAFETY AND HEALTH/QA - 1 ea OUTYEAR	24.00	HR	58000		56.44 1,355	0.00 0	0.00 0	0.00 0	56.44 1,355	56.44
ERC	ERC ADMINISTRATIVE SERVICES -1ea OUTYEAR	24.00	HR	55000		28.39 681	0.00 0	0.00 0	0.00 0	28.39 681	28.39
TOTAL Final Analysis Review and			24.00	HR		5,378	0	0	0	5,378	224.08
TOTAL Prepare Final D&D Report						8,356	0	540	0	8,896	

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U.S. Army Corps of Engineers
PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
21. Demobilization

TIME 12:57:01
DETAIL PAGE 58

21.91. Post Decommissioning Activities	QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>							
21.91.02. Release Report							
21.91.02.01. Prepare Release Report							
Output: Duration based on productivity of 250 sf of gross building area per crew hour.							
ERC	ERC HP ENGR - 1 ea		60.25	0.00	0.00	60.25	
		1.11 HR 31000	67	0	0	67	60.25
TOTAL Prepare Release Report		278.00 SF	67	0	0	67	0.24

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PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
21. Demobilization

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DETAIL PAGE 59

21.91. Post Decommissioning Activities			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
21.91.02.02. Review and Revise Release Report											
<hr/>											
Output:											
Duration for this activity is assumed to be 8 hours.											
ERC	ERC ENVIRONMENTAL ENGR - (2 ea)		16.00	HR	31000	60.25 964	0.00 0	0.00 0	0.00 0	60.25 964	60.25
ERC	ERC PROJECT MANAGEMENT - (1 ea)		8.00	HR	51000	74.98 600	0.00 0	0.00 0	0.00 0	74.98 600	74.98
TOTAL	Review and Revise Release Report		8.00	HR		1,564	0	0	0	1,564	195.48
TOTAL	Release Report					1,631	0	0	0	1,631	
TOTAL	Post Decommissioning Activities					9,986	0	540	0	10,526	
TOTAL	Demobilization					10,176	10	540	0	10,726	

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U.S. Army Corps of Engineers
PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
91. Project Management Support

TIME 12:57:01
DETAIL PAGE 60

91.20. Remediation			QUANTY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
91. Project Management Support											
91.20. Remediation											
91.20.01. Project Management Support											
Notes:											
1. This manpower allocation reflects a mix of 6 projects going on at the same time in various stages. For example: 2 large projects + 2 medium projects + 2 small projects.											
Duration:											
Remediation duration											
ERC	ERC PROJECT MANAGEMENT (.4 hrs/day)		2.85	HRS	51000	74.98 214	0.00 0	0.00 0	0.00 0	74.98 214	74.98
ERC	ERC PROJECT ENGINEER (.8 hrs/day)		5.70	HRS	31000	60.25 343	0.00 0	0.00 0	0.00 0	60.25 343	60.25
ERC	ERC TASK LEAD (.8 hrs/day)		5.70	HRS	31000	60.25 343	0.00 0	0.00 0	0.00 0	60.25 343	60.25
ERC	ERC LEAD ENGINEER (6.4 hrs/day)		45.60	HRS	31000	60.25 2,748	0.00 0	0.00 0	0.00 0	60.25 2,748	60.25
ERC	ERC RAD CONTROL ENGINEER (1.6 hrs/day)		11.40	HRS	31000	60.25 687	0.00 0	0.00 0	0.00 0	60.25 687	60.25
ERC	ERC FIELD SUPPORT (8 hrs/day)		57.00	HRS	53000	50.32 2,868	0.00 0	0.00 0	0.00 0	50.32 2,868	50.32
ERC	ERC AREA SUPERINTENDENT (.8 Hrs/day)		5.70	HRS	53000	50.32 287	0.00 0	0.00 0	0.00 0	50.32 287	50.32
ERC	ERC SITE SUPERINTENDENT (4 Hrs/Day)		28.50	HRS	53000	50.32 1,434	0.00 0	0.00 0	0.00 0	50.32 1,434	50.32
ERC	ERC ESTIMATOR (.4 Hrs/Day)		2.85	HR	21000	56.04 160	0.00 0	0.00 0	0.00 0	56.04 160	56.04
ERC	ERC PLANNER (1.2 hrs/day)		8.55	HRS	21000	56.04 479	0.00 0	0.00 0	0.00 0	56.04 479	56.04
ERC	ERC COST/SCHEDULE ENGINEER (2.4 hrs/day)		17.10	HRS	21000	56.04 958	0.00 0	0.00 0	0.00 0	56.04 958	56.04
ERC	ERC SAFTY AND HEALTH (2 hrs/day)		14.25	HRS	58000	56.44 804	0.00 0	0.00 0	0.00 0	56.44 804	56.44
ERC	ERC ADMINISTRATIVE SERVICES (1.2 hrs/day)		8.55	HRS	55000	28.39 243	0.00 0	0.00 0	0.00 0	28.39 243	28.39

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U.S. Army Corps of Engineers
PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
91. Project Management Support

TIME 12:57:01
DETAIL PAGE 61

91.20. Remediation			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
ERC	ERC PROCUREMENT (.8 hrs/day)		5.70	HRS	41000	47.74 272	0.00 0	0.00 0	0.00 0	47.74 272	47.74
ERC	ERC QUALITY ASSURANCE (.4 hrs/day)		2.85	HRS	52000	63.43 181	0.00 0	0.00 0	0.00 0	63.43 181	63.43
ERC	ERC REGULATORY SUPPORT (.4 hrs/day)		2.85	HRS	35000	63.43 181	0.00 0	0.00 0	0.00 0	63.43 181	63.43
TOTAL Project Management Support			7.13	DAY		12,202	0	0	0	12,202	1712.53

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PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
91. Project Management Support

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DETAIL PAGE 62

91.20. Remediation			QUANTITY	UOM	CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>											
91.20.03. Photography											
Notes: This activity assumes one roll of film per month for dismantling activities @ a cost of \$30/Roll.											
BHI	Rolls of Film Assume one roll of film per month of dismantling activities. Fee includes all tasks involved in processing, documenting and filing of film.		1.00	ROL		0.00 0	0.00 0	0.00 0	30.00 30	30.00 30	30.00
TOTAL Photography						0	0	0	30	30	
TOTAL Remediation						12,202	0	0	30	12,232	
TOTAL Project Management Support						12,202	0	0	30	12,232	

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DETAILED ESTIMATE

U.S. Army Corps of Engineers
PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
XXX. Estimate Quantities

TIME 12:57:01
DETAIL PAGE 63

XXX.XX. Input Quantities			QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
<hr/>									
XXX. Estimate Quantities									
XXX.XX. Input Quantities									
XXX	Concrete <= 2 ft Thk		7.00 BCY	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
XXX	Footprint		278.00 SF	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
XXX	Gross Building Area		278.00 SF	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
XXX	Exterior Wall Surface Area		542.00 SF	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
XXX	Roof Area		278.00 SF	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
XXX	Duct Asbestos Quantity		186.00 SF	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
XXX	Pipe Asbestos Quantity		28.00 SF	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
XXX	Equipment Density		1.00 C/S	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
XXX	% Rad Contaminated (Decimal)		0.15	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0
TOTAL Input Quantities				0	0	0	0	0	0

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CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
XXX. Estimate Quantities

TIME 12:57:01
DETAIL PAGE 65

XXX.YY. Additional Quantities			QUANTITY UOM CREW ID	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
YYY	Recycled Steel Volume		1.00 CY	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0.00
YYY	Assessment Duration		10.52 MO	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0.00
YYY	Remediation Duration		0.34 MO	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0.00
TOTAL Additional Quantities				----- 0	----- 0	----- 0	----- 0	----- 0	----- 0
TOTAL Estimate Quantities				----- 0	----- 0	----- 0	----- 0	----- 0	----- 0
TOTAL HANFORD ER PROGRAM			278.00 SF	95,410	5,446	2,739	47,564	151,158	543.74

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U.S. Army Corps of Engineers
PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
** PROJECT DIRECT SUMMARY - FEATURE **

TIME 12:57:01
SUMMARY PAGE 1

	QUANTITY UOM	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST	UNIT COST
01	Mobilization & Preparatory Work	9,944	2,665	684	30,004	43,298	
02	Monitoring, Sampling & Analysis	191	97	0	16,645	16,932	
08	Solids Collection & Containment	114	86	0	0	200	
17	Decon and Decommissioning (D&D)	61,587	1,507	1,361	736	65,190	
18	Disposal	544	697	153	150	1,544	
20	Site Restoration	653	384	0	0	1,037	
21	Demobilization	10,176	10	540	0	10,726	
91	Project Management Support	12,202	0	0	30	12,232	
TOTAL HANFORD ER PROGRAM		278.00 SF	95,410	5,446	2,739	47,564	151,158
Direct Distributables @ 18.92						28,599	102.87
SUBTOTAL						179,758	646.61
G&A @ 4.04%						7,262	26.12
TOTAL INCL OWNER COSTS						187,020	672.73

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U.S. Army Corps of Engineers
PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
** CONTRACTOR DIRECT SUMMARY **

TIME 12:57:01

SUMMARY PAGE 2

	QUANTITY UOM	LABOR	EQUIPMNT	MAT/SUPP	OTHER	TOTAL COST
<<< Non-Contracted Work >>>	1.00 EA	95,410	5,446	2,739	47,564	151,158

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U.S. Army Corps of Engineers
PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0
** CONTRACTOR INDIRECT SUMMARY **

TIME 12:57:01
SUMMARY PAGE 3

	TOTAL DIRECT	UNIT COST	TOTAL COST
<<< Non-Contracted Work >>>	151,158	151158.48	151,158

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ERROR REPORT

U.S. Army Corps of Engineers
PROJECT D119KW: HANFORD ER PROGRAM - D&D FACILITIES
CONTAMINATED BUILDING < 1,000 GSF (3/30) Rev. 0

TIME 12:57:01
ERROR PAGE 1

R2029: No Crew Database - No Crew Summaries or Reprice
R2032: 01040103 Restroom Fac Detail item has zero quantity - no costs reported
R2032: 17042501 D & D WORKER Detail item has zero quantity - no costs reported
R2032: 17042501 HEAVY DRIVER Detail item has zero quantity - no costs reported
R2032: 17042501 HEAVY EQUIPM Detail item has zero quantity - no costs reported
R2032: 17042501 RAD CON TECH Detail item has zero quantity - no costs reported
R2032: 17042501 D & D SUPERV Detail item has zero quantity - no costs reported
R2032: 17042501 HP SUPERVIS Detail item has zero quantity - no costs reported
R2032: 17042501 WATER TRUCK, Detail item has zero quantity - no costs reported
R2032: 17042501 TRAC HOE, CA Detail item has zero quantity - no costs reported
R2032: 17042501 UP-70 ATTACH Detail item has zero quantity - no costs reported
R2032: 17042501 FE LOADER, C Detail item has zero quantity - no costs reported
R2032: 17042501 TRUCK/TRACTO Detail item has zero quantity - no costs reported
R2032: 17042501 TRAILER, FLA Detail item has zero quantity - no costs reported
R2032: 17042501 Small Tools Detail item has zero quantity - no costs reported
R2032: 17042501 Level D Cons Detail item has zero quantity - no costs reported
R2032: XXXXX Concrete > 2 Detail item has zero quantity - no costs reported
R2032: XXXXX Masonry Quan Detail item has zero quantity - no costs reported
R2032: XXXXX Interior Par Detail item has zero quantity - no costs reported
R2032: XXXYY Dismantling Detail item has zero quantity - no costs reported
R2032: XXXYY Total High L Detail item has zero quantity - no costs reported

* * * END OF ERROR REPORT * * *

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CONTRACTOR DIRECT SUMMARY.....	2
CONTRACTOR INDIRECT SUMMARY.....	3
DETAILED ESTIMATE	DETAIL PAGE
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02. Mobilize Personnel and Equipment	
01. Mob Asbestos Air Monitoring Crew.....	1
02. Mobilize Demolition Prep Crew.....	2
05. Mobilize Site Work Equipment.....	3
04. Setup/Construct Temp Facilities	
01. Establish Facilities	
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08. Solids Collection & Containment	
01. Excavation	
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01. Excavate and Stockpile.....	13
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02. Contaminated Soil	
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